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INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL  
TRAINING AT THE UNIVERSITY OF HELSINKI 2005–2010

# RC-Specific Evaluation of ENIGMA – Environmental change and management

Seppo Saari & Antti Moilanen (Eds.)



Evaluation Panel: Biological, Agricultural and Veterinary Sciences



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University of Helsinki  
Administrative Publications 80/9  
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<b>Title:</b> International Evaluation of Research and Doctoral Training at the University of Helsinki 2005–2010 : RC-Specific Evaluation of ENIGMA – Environmental change and management	<b>Type of publication:</b> Evaluations
<b>Summary:</b> Researcher Community (RC) was a new concept of the participating unit in the evaluation. Participation in the evaluation was voluntary and the RCs had to choose one of the five characteristic categories to participate. Evaluation of the Researcher Community was based on the answers to the evaluation questions. In addition a list of publications and other activities were provided by the TUHAT system. The CWTS/Leiden University conducted analyses for 80 RCs and the Helsinki University Library for 66 RCs. Panellists, 49 and two special experts in five panels evaluated all the evaluation material as a whole and discussed the feedback for RC-specific reports in the panel meetings in Helsinki. The main part of this report is consisted of the feedback which is published as such in the report. Chapters in the report: 1. Background for the evaluation 2. Evaluation feedback for the Researcher Community 3. List of publications 4. List of activities 5. Bibliometric analyses The level of the RCs' success can be concluded from the written feedback together with the numeric evaluation of four evaluation questions and the category fitness. More conclusions of the success can be drawn based on the University-level report.	
<b>RC-specific information:</b>	
<b>Main scientific field of research:</b> Biological, Agricultural and Veterinary Sciences	<b>RC-specific keywords:</b> sustainability science, climate change, urban ecology, biodiversity, global environmental change
<b>Participation category:</b> 1. Research of the participating community represents the international cutting edge in its field	
<b>RC's responsible person:</b> Korhola, Atte	
<b>Keywords:</b> Research Evaluation, Meta-evaluation, Doctoral Training, Bibliometric Analyses, Researcher Community	

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## Foreword

The evaluation of research and doctoral training is being carried out in the years 2010–2012 and will end in 2012. The steering group appointed by the Rector in January 2010 set the conditions for participating in the evaluation and prepared the Terms of Reference to present the evaluation procedure and criteria. The publications and other scientific activities included in the evaluation covered the years 2005–2010.

The participating unit in the evaluation was defined as a Researcher Community (RC). To obtain a critical mass with university-level impact, the number of members was set to range from 20 to 120. The RCs were required to contain researchers in all stages of their research career, from doctoral students to principal investigators (PIs). All in all, 136 Researcher Communities participated in this voluntary evaluation, 5857 persons in total, of whom 1131 were principal investigators. PIs were allowed to participate in two communities in certain cases, and 72 of them used this opportunity and participated in two RCs.

This evaluation enabled researchers to define RCs from the “bottom up” and across disciplines. The aim of the evaluation was not to assess individual performance but a community with shared aims and researcher-training activities. The RCs were able to choose among five different categories that characterised the status and main aims of their research. The steering group considered the process of applying to participate in the evaluation to be important, which led to the establishment of these categories. In addition, providing a service for the RCs to enable them to benchmark their research at the global level was a main goal of the evaluation.

The data for the evaluation consisted of the RCs’ answers to evaluation questions on supplied e-forms and a compilation extracted from the TUHAT – Research Information System (RIS) on 12 April 2011. The compilation covered scientific and other publications as well as certain areas of scientific activities. During the process, the RCs were asked to check the list of publications and other scientific activities and make corrections if needed. These TUHAT compilations are public and available on the evaluation project sites of each RC in the TUHAT-RIS.

In addition to the e-form and TUHAT compilation, University of Leiden (CWTS) carried out bibliometric analyses from the articles included in the Web of Science (WoS). This was done on University and RC levels. In cases where the publication forums of the RC were clearly not represented by the WoS data, the Library of the University of Helsinki conducted a separate analysis of the publications. This was done for 66 RCs representing the humanities and social sciences.

The evaluation office also carried out an enquiry targeted to the supervisors and PhD candidates about the organisation of doctoral studies at the University of Helsinki. This and other documents describing the University and the Finnish higher education system were provided to the panellists.

The panel feedback for each RC is unique and presented as an entity. The first collective evaluation reports available for the whole panel were prepared in July–August 2011. The reports were accessible to all panel members via the electronic evaluation platform in August. Scoring from 1 to 5 was used to complement written feedback in association with evaluation questions 1–4 (scientific focus and quality, doctoral training, societal impact, cooperation) and in addition to the category evaluating the fitness for participation in the evaluation. Panellists used the international level as a point of comparison in the evaluation. Scoring was not expected to go along with a preset deviation.

Each of the draft reports were discussed and dealt with by the panel in meetings in Helsinki (from 11 September to 13 September or from 18 September to 20 September 2011). In these meetings the panels also examined the deviations among the scores and finalised the draft reports together.

The current RC-specific report deals shortly with the background of the evaluation and the terms of participation. The main evaluation feedback is provided in the evaluation report, organised according to the evaluation questions. The original material provided by the RCs for the panellists has been attached to these documents.

On behalf of the evaluation steering group and office, I sincerely wish to thank you warmly for your participation in this evaluation. The effort you made in submitting the data to TUHAT-RIS is gratefully acknowledged by the University. We wish that you find this panel feedback useful in many ways. The bibliometric profiles may open a new view on your publication forums and provide a perspective for discussion on your choice of forums. We especially hope that this evaluation report will help you in setting the future goals of your research.

Johanna Björkroth  
Vice-Rector  
Chair of the Steering Group of the Evaluation

#### **Steering Group of the evaluation**

Steering group, nominated by the Rector of the University, was responsible for the planning of the evaluation and its implementation having altogether 22 meetings between February 2010 and March 2012.

#### **Chair**

Vice-Rector, professor **Johanna Björkroth**

#### **Vice-Chair**

Professor **Marja Airaksinen**

Chief Information Specialist, Dr **Maria Forsman**

Professor **Arto Mustajoki**

University Lecturer, Dr **Kirsi Pyhältö**

Director of Strategic Planning and Development, Dr **Ossi Tuomi**

Doctoral candidate, MSocSc **Jussi Vauhkonen**



# Panel members

## **CHAIR**

### **Professor Ary A. Hoffman**

Ecological genetics, evolutionary biology,  
biodiversity conservation, zoology  
University of Melbourne, Australia

## **VICE-CHAIR**

### **Professor Barbara Koch**

Forest Sciences, remote sensing  
University of Freiburg, Germany

### **Professor Per-Anders Hansson**

Agricultural engineering, modeling, life cycle  
analysis, bioenergy  
Swedish University of Agricultural Sciences

### **Professor Danny Huylebroeck**

Developmental biology  
Katholieke Universiteit Leuven, Belgium

### **Professor Jonathan King**

Virus assembly, protein folding  
Massachusetts Institute of Technology MIT, USA

### **Professor Hannu J.T. Korhonen**

Functional foods, dairy technology, milk hygiene  
MTT Agrifood Research Finland

### **Professor Kristiina Kruus**

Microbiological biotechnology, microbiological  
enzymes, applied microbiology  
VTT Technical Research Centre of Finland

### **Professor Joakim Lundeberg**

Biochemistry, biotechnology, sequencing, genomics  
KTH Royal Institute of Technology, Sweden

### **Professor Dominiek Maes**

Veterinary medicine  
Ghent University, Belgium

### **Professor Olli Saastamoinen**

Forest economics and policy  
University of Eastern Finland

### **Professor Kai Simons**

Biochemistry, molecular biology, cell biology  
Max-Planck-Institute of Molecular Cell Biology and  
Genetics, Germany

The panel, independently, evaluated all the submitted material and was responsible for the feedback of the RC-specific reports. The panel members were asked to confirm whether they had any conflict of interests with the RCs. If this was the case, the panel members disqualified themselves in discussion and report writing.

Added expertise to the evaluation was contributed by the members from the other panels and by one evaluator outside the panels.

**External Expert**  
**Professor Anders Linde**  
Oral biochemi  
Faculty of Odontology  
Göteborg University  
Sweden

#### **Experts from the Other Panels**

**Professor Caitlin Buck**, from the Panel of Natural Sciences  
**Professor Ritske Huismans**, from the Panel of Natural Sciences  
**Professor Johanna Ivaska**, from the Panel of Medicine, biomedicine and health sciences  
**Professor Lea Kauppi**, from the Panel of Natural Sciences  
**Professor Holger Stark**, from the Panel of Natural Sciences  
**Professor Peter York**, from the Panel of Medicine, biomedicine and health sciences

#### **EVALUATION OFFICE**

**Dr Seppo Saari, Doc.**, Senior Adviser in Evaluation, was responsible for the entire evaluation, its planning and implementation and acted as an Editor-in-chief of the reports.

**Dr Eeva Sievi, Doc.**, Adviser, was responsible for the registration and evaluation material compilations for the panellists. She worked in the evaluation office from August 2010 to July 2011.

**MSocSc Paula Ranne**, Planning Officer, was responsible for organising the panel meetings and all the other practical issues like agreements and fees and editing a part the RC-specific reports. She worked in the evaluation office from March 2011 to January 2012.

**Mr Antti Mollanen**, Project Secretary, was responsible for editing the reports. He worked in the evaluation office from January 2012 to April 2012.

#### **TUHAT OFFICE**

##### **Provision of the publication and other scientific activity data**

**Mrs Aija Kaitera**, Project Manager of TUHAT-RIS served the project ex officio providing the evaluation project with the updated information from TUHAT-RIS. The TUHAT office assisted in mapping the publications with CWTS/University of Leiden.

**MA Liisa Ekebon**, Assisting Officer, served in TUHAT-RIS updating the publications for the evaluation. She also assisted the UH/Library analyses.

**BA Liisa Jäppinen**, Assisting Officer, served in TUHAT-RIS updating the publications for the evaluation.

#### **HELSINKI UNIVERSITY LIBRARY**

##### **Provision of the publication analyses**

**Dr Maria Forsman**, Chief Information Specialist in the Helsinki University Library, managed with her 10 colleagues the bibliometric analyses in humanities, social sciences and in other fields of sciences where CWTS analyses were not applicable.

## **Acronyms and abbreviations applied in the report**

### **External competitive funding**

AF – Academy of Finland  
TEKES - Finnish Funding Agency for Technology and Innovation  
EU - European Union  
ERC - European Research Council  
International and national foundations  
FP7/6 etc. /Framework Programmes/Funding of European Commission

### **Evaluation marks**

Outstanding (5)  
Excellent (4)  
Very Good (3)  
Good (2)  
Sufficient (1)

### **Abbreviations of Bibliometric Indicators**

P - Number of publications  
TCS – Total number of citations  
MCS - Number of citations per publication, excluding self-citations  
PNC - Percentage of uncited publications  
MNCS - Field-normalized number of citations per publication  
MNJS - Field-normalized average journal impact  
THCP10 - Field-normalized proportion highly cited publications (top 10%)  
INT\_COV - Internal coverage, the average amount of references covered by the WoS  
WoS – Thomson Reuters Web of Science Databases

### **Participation category**

Category 1. The research of the participating community represents the international cutting edge in its field.  
Category 2. The research of the participating community is of high quality, but the community in its present composition has yet to achieve strong international recognition or a clear break-through.  
Category 3. The research of the participating community is distinct from mainstream research, and the special features of the research tradition in the field must be considered in the evaluation.  
Category 4. The research of the participating community represents an innovative opening.  
Category 5. The research of the participating community has a highly significant societal impact.

### **Research focus areas of the University of Helsinki**

Focus area 1: The basic structure, materials and natural resources of the physical world  
Focus area 2: The basic structure of life  
Focus area 3: The changing environment – clean water  
Focus area 4: The thinking and learning human being  
Focus area 5: Welfare and safety  
Focus area 6: Clinical research  
Focus area 7: Precise reasoning  
Focus area 8: Language and culture  
Focus area 9: Social justice  
Focus area 10: Globalisation and social change



# 1 Introduction to the Evaluation

## 1.1 RC-specific evaluation reports

The participants in the evaluation of research and doctoral training were Researcher Communities (hereafter referred to as the RC). The RC refers to the group of researchers who registered together in the evaluation of their research and doctoral training. Preconditions in forming RCs were stated in the Guidelines for the Participating Researcher Communities. The RCs defined themselves whether their compositions should be considered well-established or new.

It is essential to emphasise that the evaluation combines both meta-evaluation<sup>1</sup> and traditional research assessment exercise and its focus is both on the research outcomes and procedures associated with research and doctoral training. The approach to the evaluation is enhancement-led where self-evaluation constituted the main information. The answers to the evaluation questions formed together with the information of publications and other scientific activities an entity that was to be reviewed as a whole.

The present evaluation recognizes and justifies the diversity of research practices and publication traditions. Traditional Research Assessment Exercises do not necessarily value high quality research with low volumes or research distinct from mainstream research. It is challenging to expose the diversity of research to fair comparison. To understand the essence of different research practices and to do justice to their diversity was one of the main challenges of the present evaluation method. Understanding the divergent starting points of the RCs demanded sensitivity from the evaluators.

## 1.2 Aims and objectives in the evaluation

The aims of the evaluation are as follows:

- to improve the level of research and doctoral training at the University of Helsinki and to raise their international profile in accordance with the University's strategic policies. The improvement of doctoral training should be compared to the University's policy.<sup>2</sup>
- to enhance the research conducted at the University by taking into account the diversity, originality, multidisciplinary nature, success and field-specificity,
- to recognize the conditions and prerequisites under which excellent, original and high-impact research is carried out,
- to offer the academic community the opportunity to receive topical and versatile international peer feedback,
- to better recognize the University's research potential.
- to exploit the University's TUHAT research information system to enable transparency of publishing activities and in the production of reliable, comparable data.

## 1.3 Evaluation method

The evaluation can be considered as an enhancement-led evaluation. Instead of ranking, the main aim is to provide useful information for the enhancement of research and doctoral training of the participating RCs. The comparison should take into account each field of science and acknowledge their special character.

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<sup>1</sup> The panellists did not read research reports or abstracts but instead, they evaluated answers to the evaluation questions, tables and compilations of publications, other scientific activities, bibliometrics or comparable analyses.

<sup>2</sup> [Policies on doctoral degrees and other postgraduate degrees at the University of Helsinki.](#)

The comparison produced information about the present status and factors that have lead to success. Also challenges in the operations and outcomes were recognized.

The evaluation approach has been designed to recognize better the significance and specific nature of researcher communities and research areas in the multidisciplinary top-level university. Furthermore, one of the aims of the evaluation is to bring to light those evaluation aspects that differ from the prevalent ones. Thus the views of various fields of research can be described and research arising from various starting points understood better. The doctoral training is integrated into the evaluation as a natural component related to research. Operational processes of doctoral training are being examined in the evaluation.

**Five stages of the evaluation method were:**

1. Registration – Stage 1
2. Self-evaluation – Stage 2
3. TUHAT<sup>3</sup> compilations on publications and other scientific activities<sup>4</sup>
4. External evaluation
5. Public reporting

## **1.4 Implementation of the external evaluation**

### **Five Evaluation Panels**

Five evaluation panels consisted of independent, renowned and highly respected experts. The main domains of the panels are:

1. biological, agricultural and veterinary sciences
2. medicine, biomedicine and health sciences
3. natural sciences
4. humanities
5. social sciences

The University invited 10 renowned scientists to act as chairs or vice-chairs of the five panels based on the suggestions of faculties and independent institutes. Besides leading the work of the panel, an additional role of the chairs was to discuss with other panel chairs in order to adopt a broadly similar approach. The panel chairs and vice-chairs had a pre-meeting on 27 May 2011 in Amsterdam.

The panel compositions were nominated by the Rector of the University 27 April 2011. The participating RCs suggested the panel members. The total number of panel members was 50. The reason for a smaller number of panellists as compared to the previous evaluations was the character of the evaluation as a meta-evaluation. The panellists did not read research reports or abstracts but instead, they evaluated answers to the evaluation questions, tables and compilations of publications, other scientific activities, bibliometrics and comparable analyses.

The panel meetings were held in Helsinki:

- On 11–13 September 2011: (1) biological, agricultural and veterinary sciences, (2) medicine, biomedicine and health sciences and (3) natural sciences.
- On 18–20 September 2011: (4) humanities and (5) social sciences.

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<sup>3</sup> TUHAT (acronym) of Research Information System (RIS) of the University of Helsinki

<sup>4</sup> Supervision of thesis, prizes and awards, editorial work and peer reviews, participation in committees, boards and networks and public appearances.

## 1.5 Evaluation material

The main material in the evaluation was the RCs' self-evaluations that were qualitative in character and allowed the RCs to choose what was important to mention or emphasise and what was left unmentioned.

The present evaluation is exceptional at least in the Finnish context because it is based on both the evaluation documentation (self-evaluation questions, publications and other scientific activities) and the bibliometric reports. All documents were delivered to the panellists for examination.

Traditional bibliometrics can be reasonably done mainly in medicine, biosciences and natural sciences when using the Web of Science database, for example. Bibliometrics, provided by CWTS/The Centre for Science and Technology Studies, University of Leiden, cover only the publications that include WoS identification in the TUHAT-RIS.

Traditional bibliometrics are seldom relevant in humanities and social sciences because the international comparable databases do not store every type of high quality research publications, such as books and monographs and scientific journals in other languages than English. The Helsinki University Library has done analysis to the RCs, if their publications were not well represented in the Web of Science databases (RCs should have at least 50 publications and internal coverage of publications more than 40%) – it meant 58 RCs. The bibliometric material for the evaluation panels was available in June 2011. The RC-specific bibliometric reports are attached at the end of each report.

The panels were provided with the evaluation material and all other necessary background information, such as the basic information about the University of Helsinki and the Finnish higher education system.

### Evaluation material

1. Registration documents of the RCs for the background information
2. Self evaluation material – answers to the evaluation questions
3. Publications and other scientific activities based on the TUHAT RIS:
  - 3.1. statistics of publications
  - 3.2. list of publications
  - 3.3. statistics of other scientific activities
  - 3.4. list of other scientific activities
4. Bibliometrics and comparable analyses:
  - 4.1. Analyses of publications based on the verification of TUHAT-RIS publications with the Web of Science publications (CWTS/University of Leiden)
  - 4.2. Publication statistics analysed by the Helsinki University Library - mainly for humanities and social sciences
5. University level survey on doctoral training (August 2011)
6. University level analysis on publications 2005–2010 (August 2011) provided by CWTS/University of Leiden

### Background material

#### University of Helsinki

- [Basic information about the University of the Helsinki](#)
- [The structure of doctoral training at the University of Helsinki](#)
- Previous evaluations of research at the University of Helsinki – links to the reports: [1998](#) and [2005](#)

#### The Finnish Universities/Research Institutes

- [Finnish University system](#)
- [Evaluation of the Finnish National Innovation System](#)
- [The State and Quality of Scientific Research in Finland. Publication of the Academy of Finland 9/09.](#)

The evaluation panels were provided also with other relevant material on request before the meetings in Helsinki.

## 1.6 Evaluation questions and material

The participating RCs answered the following evaluation questions which are presented according to the evaluation form. In addition, TUHAT RIS was used to provide the **additional material** as explained. For giving the feedback to the RCs, the panellists received the evaluation feedback form constructed in line with the evaluation questions:

### 1. Focus and quality of the RC's research

- Description of
  - the RC's research focus.
  - the quality of the RC's research (incl. key research questions and results)
  - the scientific significance of the RC's research in the research field(s)
- Identification of the ways to strengthen the focus and improve the quality of the RC's research

The additional material: TUHAT compilation of the RC's publications, analysis of the RC's publications data (provided by University of Leiden and the Helsinki University Library)

A written feedback from the aspects of: scientific quality, scientific significance, societal impact, innovativeness

- Strengths
- Areas of development
- Other remarks
- Recommendations

Numeric evaluation: OUTSTANDING (5), EXCELLENT (4), VERY GOOD (3), GOOD (2), SUFFICIENT (1)

### 2. Practises and quality of doctoral training

- Organising of the doctoral training in the RC. Description of the RC's principles for:
  - recruitment and selection of doctoral candidates
  - supervision of doctoral candidates
  - collaboration with faculties, departments/institutes, and potential graduate schools/doctoral programmes
  - good practises and quality assurance in doctoral training
  - assuring of good career perspectives for the doctoral candidates/fresh doctorates
- Identification of the RC's strengths and challenges related to the practises and quality of doctoral training, and the actions planned for their development.

The additional material: TUHAT compilation of the RC's other scientific activities/supervision of doctoral dissertations

A written feedback from the aspects of: processes and good practices related to leadership and management

- Strengths
- Areas of development
- Other remarks
- Recommendations

Numeric evaluation: OUTSTANDING (5), EXCELLENT (4), VERY GOOD (3), GOOD (2), SUFFICIENT (1)

### 3. The societal impact of research and doctoral training

- Description on how the RC interacts with and contributes to the society (collaboration with public, private and/or 3rd sector).
- Identification of the ways to strengthen the societal impact of the RC's research and doctoral training.

The additional material: TUHAT compilation of the RC's other scientific activities.

A written feedback from the aspects of: societal impact, national and international collaboration, innovativeness

- Strengths
- Areas of development
- Other remarks
- Recommendations

Numeric evaluation: OUTSTANDING (5), EXCELLENT (4), VERY GOOD (3), GOOD (2), SUFFICIENT (1)



#### **4. International and national (incl. intersectoral) research collaboration and researcher mobility**

- Description of
  - the RC's research collaborations and joint doctoral training activities
  - how the RC has promoted researcher mobility
- Identification of the RC's strengths and challenges related to research collaboration and researcher mobility, and the actions planned for their development.

A written feedback from the aspects of: scientific quality, national and international collaboration

- Strengths
- Areas of development
- Other remarks
- Recommendations

Numeric evaluation: OUTSTANDING (5), EXCELLENT (4), VERY GOOD (3), GOOD (2), SUFFICIENT (1)

#### **5. Operational conditions**

- Description of the operational conditions in the RC's research environment (e.g. research infrastructure, balance between research and teaching duties).
- Identification of the RC's strengths and challenges related to operational conditions, and the actions planned for their development.

A written feedback from the aspects of: processes and good practices related to leadership and management

- Strengths
- Areas of development
- Other remarks
- Recommendations

#### **6. Leadership and management in the researcher community**

- Description of
  - the execution and processes of leadership in the RC
  - how the management-related responsibilities and roles are distributed in the RC
  - how the leadership- and management-related processes support
    - high quality research
    - collaboration between principal investigators and other researchers in the RC
    - the RC's research focus
    - strengthening of the RC's know-how
- Identification of the RC's strengths and challenges related to leadership and management, and the actions planned for developing the processes

#### **7. External competitive funding of the RC**

- The RCs were asked to provide information of such external competitive funding, where:
  - the funding decisions have been made during 1.1.2005-31.12.2010, and
  - the administrator of the funding is/has been the University of Helsinki
- On the e-form the RCs were asked to provide:
  - 1) The relevant funding source(s) from a given list (Academy of Finland/Research Council, TEKES/The Finnish Funding Agency for Technology and Innovation, EU, ERC, foundations, other national funding organisations, other international funding organisations), and
  - 2) The total sum of funding which the organisation in question had decided to allocate to the RCs members during 1.1.2005-31.12.2010.

Competitive funding reported in the text is also to be considered when evaluating this point.

A written feedback from the aspects of: scientific quality, scientific significance, societal impact, innovativeness, future significance

- Strengths
- Areas of development
- Other remarks
- Recommendations

#### **8. The RC's strategic action plan for 2011-2013**

- RC's description of their future perspectives in relation to research and doctoral training.

A written feedback from the aspects of: scientific quality, scientific significance, societal impact, processes and good practices related to leadership and management, national and international collaboration, innovativeness, future significance

- Strengths
- Areas of development

- Other remarks
- Recommendations

## 9. Evaluation of the category of the RC in the context of entity of the evaluation material (1-8)

The RC's fitness to the chosen participation category

A written feedback evaluating the RC's fitness to the chosen participation category

- Strengths
- Areas of development
- Other remarks
- Recommendations

Numeric evaluation: OUTSTANDING (5), EXCELLENT (4), VERY GOOD (3), GOOD (2), SUFFICIENT (1)

## 10. Short description of how the RC members contributed the compilation of the stage 2 material

Comments on the compilation of evaluation material

## 11. How the UH's focus areas are presented in the RC's research?

Comments if applicable

## 12. RC-specific main recommendations based on the previous questions 1-11

## 13. RC-specific conclusions

# 1.7 Evaluation criteria

The panellists were expected to give evaluative and analytical feedback to each evaluation question according to their aspects in order to describe and justify the quality of the submitted material. In addition, the evaluation feedback was asked to be pointed out the level of the performance according to the following classifications:

- outstanding (5)
- excellent (4)
- very good (3)
- good (2)
- sufficient (1)

Evaluation according to the criteria was to be made with thorough consideration of the entire evaluation material of the RC in question. Finally, in questions 1-4 and 9, the panellists were expected to classify their written feedback into one of the provided levels (the levels included respective descriptions, 'criteria'). Some panels used decimals in marks. The descriptive level was interpreted according to the integers and not rounding up the decimals by the editors.

## Description of criteria levels

### Question 1 – FOCUS AND QUALITY OF THE RC'S RESEARCH

#### Classification: Criteria (level of procedures and results)

#### Outstanding quality of procedures and results (5)

Outstandingly strong research, also from international perspective. Attracts great international interest with a wide impact, including publications in leading journals and/or monographs published by leading international publishing houses. The research has world leading qualities. The research focus, key research questions scientific significance, societal impact and innovativeness are of outstanding quality.

*In cases where the research is of a national character and, in the judgement of the evaluators, should remain so, the concepts of "international attention" or "international impact" etc. in the grading criteria above may be replaced by "international comparability".*

Operations and procedures are of outstanding quality, transparent and shared in the community. The improvement of research and other efforts are documented and operations and practices are in alignment with the documentation. The ambition to develop the community together is of outstanding quality.

#### **Excellent quality of procedures and results (4)**

Research of excellent quality. Typically published with great impact, also internationally. Without doubt, the research has a leading position in its field in Finland.

Operations and procedures are of excellent quality, transparent and shared in the community. The improvement of research and other efforts are documented and operations and practices are to large extent in alignment with the documentation. The ambition to develop the community together is of excellent quality.

#### **Very good quality of procedures and results (3)**

The research is of such very good quality that it attracts wide national and international attention.

Operations and procedures are of very good quality, transparent and shared in the community. The improvement of research and other efforts are documented and operations and practices are to large extent in alignment with the documentation. The ambition to develop the community together is of very good quality.

#### **Good quality of procedures and results (2)**

Good research attracting mainly national attention but possessing international potential, extraordinarily high relevance may motivate good research.

Operations and procedures are of good quality, shared occasionally in the community. The improvement of research and other efforts are occasionally documented and operations and practices are to large extent in alignment with the documentation. The ambition to develop the community together is of good quality.

#### **Sufficient quality of procedures and results (1)**

In some cases the research is insufficient and reports do not gain wide circulation or do not have national or international attention. Research activities should be revised.

Operations and procedures are of sufficient quality, shared occasionally in the community. The improvement of research and other efforts are occasionally documented and operations and practices are to some extent in alignment with the documentation. The ambition to develop the community together is of sufficient quality.

### **Question 2 – DOCTORAL TRAINING**

### **Question 3 – SOCIETAL IMPACT**

### **Question 4 – COLLABORATION**

#### **Classification: Criteria (level of procedures and results)**

#### **Outstanding quality of procedures and results (5)**

Procedures are of outstanding quality, transparent and shared in the community. The practices and quality of doctoral training/societal impact/international and national collaboration/leadership and management are documented and operations and practices are in alignment with the documentation. The ambition to develop the community together is of outstanding quality. The procedures and results are regularly evaluated and the feedback has an effect on the planning.

#### **Excellent quality of procedures and results (4)**

Procedures are of excellent quality, transparent and shared in the community. The practices and quality of doctoral training/societal impact/international and national collaboration/leadership and management are documented and operations and practices are to large extent in alignment with the documentation. The ambition to develop the community together is of excellent quality. The procedures and outcomes are evaluated and the feedback has an effect on the planning.

#### **Very good quality of procedures and results (3)**

Procedures are of very good quality, transparent and shared in the community. The practices and quality of doctoral training/societal impact/international and national collaboration/leadership and

management are documented and operations and practices are to large extent in alignment with the documentation. The ambition to develop the community together is of very good quality.

#### **Good quality of procedures and results (2)**

Procedures are of good quality, shared occasionally in the community. The practices and quality of doctoral training/societal impact/international and national collaboration/leadership and management are documented and operations and practices are to large extent in alignment with the documentation. The ambition to develop the community together is of good quality.

#### **Sufficient quality of procedures and results (1)**

Procedures are of sufficient quality, transparent and shared in the community. The practices and quality of doctoral training/societal impact/international and national collaboration/leadership and management are occasionally documented and operations and practices are to some extent in alignment with the documentation. The ambition to develop the community together is of sufficient quality.

### **Question 9 – CATEGORY**

Participation category – fitness for the category chosen

The choice and justification for the chosen category below should be reflected in the RC's responses to the evaluation questions 1–8.

1. *The research of the participating community represents the international cutting edge in its field.*
2. *The research of the participating community is of high quality, but the community in its present composition has yet to achieve strong international recognition or a clear break-through.*
3. *The research of the participating community is distinct from mainstream research, and the special features of the research tradition in the field must be considered in the evaluation.* The research is of high quality and has great significance and impact in its field. However, the generally used research evaluation methods do not necessarily shed sufficient light on the merits of the research.
4. *The research of the participating community represents an innovative opening.* A new opening can be an innovative combination of research fields, or it can be proven to have a special social, national or international demand or other significance. Even if the researcher community in its present composition has yet to obtain proof of international success, its members can produce convincing evidence of the high level of their previous research.
5. *The research of the participating community has a highly significant societal impact.* The participating researcher community is able to justify the high social significance of its research. The research may relate to national legislation, media visibility or participation in social debate, or other activities promoting social development and human welfare. In addition to having societal impact, the research must be of a high standard.

#### **An example of outstanding fitness for category choice (5) <sup>5</sup>**

The RC's representation and argumentation for the chosen category were convincing. The RC recognized its real capacity and apparent outcomes in a wider context to the research communities. The specific character of the RC was well-recognized and well stated in the responses. The RC fitted optimally for the category.

- Outstanding (5)
- Excellent (4)
- Very good (3)
- Good (2)
- Sufficient (1)

The above-mentioned definition of outstanding was only an example in order to assist the panellists in the positioning of the classification. There was no exact definition for the category fitness.

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<sup>5</sup> The panels discussed the category fitness and made the final conclusions of the interpretation of it.

## 1.8 Timetable of the evaluation

The main timetable of the evaluation:

- |  |                       |
|--|-----------------------|
| 1. Registration                            | November 2010         |
| 2. Submission of self-evaluation materials | January–February 2011 |
| 3. External peer review                    | May–September 2011    |
| 4. Published reports                       | March–April 2012      |
| - University level public report           |                       |
| - RC specific reports                      |                       |

The entire evaluation was implemented during the university's strategy period 2010–2012. The preliminary results were available for the planning of the following strategy period in late autumn 2011. The evaluation reports will be published in March/April 2012. More detailed time schedule is published in the University report.

## 1.9 Evaluation feedback – consensus of the entire panel

The panellists evaluated all the RC-specific material before the meetings in Helsinki and mailed the draft reports to the evaluation office. The latest interim versions were on-line available to all the panellists on the Wiki-sites. In September 2011, in Helsinki the panels discussed the material, revised the first draft reports and decided the final numeric evaluation. After the meetings in Helsinki, the panels continued working and finalised the reports before the end of November 2011. The final RC-specific reports are the consensus of the entire panel.

The evaluation reports were written by the panels independently. During the editing process, the evaluation office requested some clarifications from the panels when necessary. The tone and style in the reports were not harmonized in the editing process. All the reports follow the original texts written by the panels as far as it was possible.

The original evaluation material of the RCs, provided for the panellists is attached at the end of the report. It is essential to notice that the exported lists of publications and other scientific activities depend how the data was stored in the TUHAT-RIS by the RCs.



## 2 Evaluation feedback

### 2.1 Focus and quality of the RC's research

- *Description of*
  - *the RC's research focus*
  - *the quality of the RC's research (incl. key research questions and results)*
  - *the scientific significance of the RC's research in the research field(s)*
- *Identification of the ways to strengthen the focus and improve the quality of the RC's research*

*ASPECTS: Scientific quality, scientific significance, societal impact, innovativeness*

The group is an interdisciplinary group looking from different perspectives at environmental problems. They cover very different fields of research covering technical, natural science and social aspects. The major regional focus is on arctic, sub-arctic and northern eco-systems. However they also integrate urban eco-systems in their research which is a totally different focus. Of the three leading persons, Korhola is carrying out the most focused research, concentrating on arctic ecosystems under global change, while Niemelä and Kauppi cover two relatively different fields. Kauppi has specialized in research on forest eco-services on one the one hand and on industrial and agricultural material flow on the other. Niemelä, well known as a researcher in the field of biodiversity, has widened his research to ecosystem impact of urbanization. In addition he tries to take up more and more social aspects in his research. This development on the one hand provides a very comprehensive approach and on the other hand results in some danger that research will miss in depth quality due to the wide area covered.

The reputation of the main PIs is high and they are internationally competitive. They have a high number of papers in scientific journals and, according to the indices, the publications are of high quality with good impact on the research society. This is an excellent research group centred around three professors with strong international reputations. The group is undoubtedly internationally competitive. However it is recognized that the main source of funding is the Finish Academy of Science and funds from international organizations are not as high as they could be the reputation of the main RC researchers. The group is well connected to government and other agencies. The publications are in general in high level scientific journals. In addition Korhola, in particular, seems to be very present in committees and public media. The main researchers, Niemelä and Korhola, have produced large numbers of high quality output while Kauppi, with 1.5 publications a year in scientific journals, might have the potential to improve.

The description of strengths, improvements and challenges is a little weak. Typically the RC offer a list of attributes, skills and opportunities rather than providing evidence of critical reflection on where the group is now and where they would like to be in, say, five years time. In particular, they do not really point out how the focus will be strengthened, where the challenges are and how the challenges will be met in future. They do not provide clear ideas about how to strengthen the interdisciplinarity and collaboration between the researchers in the group which, as they say, is a real potential and is fundamental if they want to be successful. A clear identification of their weaknesses and the under-resourced field is missing. However this is the basis to compile an effective action plan.

It is not clear if the publication indices provide good information on the normal publication rate in this field, because the field is so wide.

**Numeric evaluation: 4 (Excellent)**

### 2.2 Practises and quality of doctoral training

- *Organising of the doctoral training in the RC. Description of the RC's principles for:*
  - *recruitment and selection of doctoral candidates*
  - *supervision of doctoral candidates*

- *collaboration with faculties, departments/institutes, and potential graduate schools/doctoral programmes*
- *good practises and quality assurance in doctoral training*
- *assuring of good career perspectives for the doctoral candidates/fresh doctorates*
- *Identification of the RC's strengths and challenges related to the practises and quality of doctoral training, and the actions planned for their development.*
- *Additional material: TUHAT compilation of the RC's other scientific activities/supervision of doctoral dissertations*

**ASPECTS:** *Processes and good practices related to leadership and management*

The RC has a good number of doctoral students which seem to cover a wide range from ecological to societal areas. The group does not tell us, however, how many PhD students per PhD they feel is optimal. They also do not tell us clearly how many graduates they have had from the PhD programme during the assessment period.

Since the leading professors have a strong background in ecological and natural sciences it is not very clear how the supervision of doctoral students working on topics in the social sciences takes place. A major focus seems to be on arctic studies and there is clearly active participation in an arctic graduate school. It is unclear why there are no connections to other graduate schools.

The submission comments on good practice in terms of participation in seminars and so on but the submission lacks details that were present in other submissions. There is also no information on what abilities and merits are requested from the students to be selected and how the mix of national and international students is. It would be of interest to find out about career pathways of the students. It is mentioned that the students achieve high ratings for their doctoral thesis; there is no information provided about how these ratings compare to those of doctoral students from other departments (in order to see the general level within the RC in biology or environmental sciences).

The submission notes the challenges of multidisciplinary approaches, and the panel wonders about the steps that might be taken to deal with such issues.

The doctoral students seem to have a good publication rate, which is a strength in the doctoral training. However a more quantitative and qualitative description would be needed for better valuation.

**Numeric evaluation: 2 (Good)**

## 2.3 The societal impact of research and doctoral training

- *Description on how the RC interacts with and contributes to the society (collaboration with public, private and/or 3rd sector).*
- *Identification of the ways to strengthen the societal impact of the RC's research and doctoral training.*
- *Additional material: TUHAT compilation of the RC's other scientific activities.*

**ASPECTS:** *Societal impact, national and international collaboration, innovativeness*

There is a strong societal impact to be expected given the nature of research topics within this RC. Impact is demonstrated by numerous interactions with the print and broadcast media as well as committee memberships, contacts and interactions with governmental and political committees, working groups and consultations. There is also a strong science policy focus, especially by the group of Prof. Niemelä. However it is not clear what the benefits and the threats of such activities are for research, PhD students and the University of Helsinki as an organization.

**Numeric evaluation: 5 (Outstanding)**



## 2.4 International and national (incl. intersectoral) research collaboration and researcher mobility

- *Description of*
  - *the RC's research collaborations and joint doctoral training activities*
  - *how the RC has promoted researcher mobility*
- *Identification of the RC's strengths and challenges related to research collaboration and researcher mobility, and the actions planned for their development.*

*ASPECTS: Scientific quality, national and international collaboration*

The group has strong interactions with national and international groups in Anglo-Saxon countries. The connections seem to be more less strong with non English speaking countries. The reasons for this are not provided. Students are encouraged to apply for post-doc fellowships via the Marie Curie programme. It would be interesting to see what percentage of post-doc students from this RC get funded and go abroad.

**Numeric evaluation: 3 (Very Good)**

## 2.5 Operational conditions

- *Description of the operational conditions in the RC's research environment (e.g. research infrastructure, balance between research and teaching duties).*
- *Identification of the RC's strengths and challenges related to operational conditions, and the actions planned for their development.*

*ASPECTS: Processes and good practices related to leadership and management*

It is described that the Viikki Campus provides nearly ideal conditions for the researcher community. It is described that the needed equipment is in place for Prof. Niemelä. Is this not true for the other two professors? A major drawback for the research seems to be the high number of undergraduate students and the commitments Prof. Niemelä has as dean of the Faculty of Biological and Environmental Sciences as well as chair of the board of HENVI. The problems and challenges however are not described and therefore it is unclear how these conditions influence the research and what is needed to improve the conditions.

## 2.6 Leadership and management in the researcher community

- *Description of*
  - *the execution and processes of leadership in the RC*
  - *how the management-related responsibilities and roles are distributed in the RC*
  - *how the leadership- and management-related processes support*
    - *high quality research*
    - *collaboration between principal investigators and other researchers in the RC*
    - *the RC's research focus*
    - *strengthening of the RC's know-how*
- *Identification of the RC's strengths and challenges related to leadership and management, and the actions planned for developing the processes*

*ASPECTS: Processes and good practices related to leadership and management*

A clear leadership structure is not noticeable. This might be due to a missing description or because there is no organized leadership in the RC. This needs to be further clarified.

It is noticeable that in Section 9, when asked how the RC members contributed to the material for the peer review, we are simply told "Each member wrote an answer to each question". Nothing is said about

precisely which members of the RC contributed, whether any group reflection occurred, how the contributions were drawn together or whether further discussion took place.

## 2.7 External competitive funding of the RC

- *The RCs were asked to provide information of such external competitive funding, where:*
  - *the funding decisions have been made during 1.1.2005–31.12.2010, and*
  - *the administrator of the funding is/has been the University of Helsinki*
- *On the e-form the RCs were asked to provide:*
  - 1) *The relevant funding source(s) from a given list (Academy of Finland/Research Council, TEKES/The Finnish Funding Agency for Technology and Innovation, EU, ERC, foundations, other national funding organisations, other international funding organizations), and*
  - 2) *The total sum of funding which the organisation in question had decided to allocate to the RCs members during 1.1.2005–31.12.2010.*

*Competitive funding reported in the text is also to be considered when evaluating this point.*

*ASPECTS: Scientific quality, scientific significance, societal impact, innovativeness and future significance*

The RC has been successful in attracting substantial funding from the Academy of Finland, and also in some other initiatives including EU funding. However the proportion of international funding is quite low and could be much higher given the international visibility of the group. It is also not clear, whether the funding level currently received from the Academy of Finland is sufficient to cover the planned activities of the RC or to support its dynamic development.

## 2.8 The RC's strategic action plan for 2011–2013

- *RC's description of their future perspectives in relation to research and doctoral training.*

*ASPECTS: Scientific quality, scientific significance, societal Impact, processes and good practices related to leadership and management, national and international collaboration, innovativeness, future significance*

There is no real action plan provided. They talk about very general objectives they would like to reach without providing ideas about actions that are needed to achieve them.

It would have been especially interesting to learn what fields the RC considers are under-resourced and how they intend to improve this. It is astonishing that they say they wish to strengthen interdisciplinarity because it could be assumed that they already work at the highest level of interdisciplinarity (given what they have written before under research and given that their entire research focus is interdisciplinary).

A main key could be to improve the level of competitive international funding.

## 2.9 Evaluation of the category of the RC in the context of entity of the evaluation material (1-8)

*The RC's fitness to the chosen participation category.*

*Category 1. The research of the participating community represents the international cutting edge in its field.*

We are considering this RC in the Panel for Biological, agricultural and veterinary sciences, but they seem to have a better fit to the Panel for Natural sciences. Choice of Panel is not discussed in the document and the only mention of scientific fields of interest (in general) is given in section 3 where they state their main scientific field as "natural sciences". Is there an underlying strategy here that we should know about?

The submission tends to being "self congratulatory". While the leading researchers in the RC are clearly very strong with a very high level of societal engagement, they do not comprehensively justify their world

class self-estimate in the report. The material provided leaves a number of questions open and sometimes does not refer to the requested information according to the headline.

**Numeric evaluation: 3 (Very Good)**

## **2.10 Short description of how the RC members contributed the compilation of the stage 2 material**

No real answer was given, only that all members answered the questions. No clarification was offered as to how the answers were compiled for this report (see also our comment in 2.6 above).

## **2.11 How the UH's focus areas are presented in the RC's research**

*Focus area 1: the basic structure, materials and natural resources of the physical world*

The RC makes no reference to these in their evaluation document and the Review Panel saw links to the changing environment focus area.

## **2.12 RC-specific main recommendations**

Although this is a strong and diverse group in many ways, the RC submission does not provide a clear indication of how the disciplines represented by the group are to be combined into a plan of action for the group. The Panel therefore recommends that the submission be redrafted with a clearer focus on how they will interact to achieve their outcomes. The submission includes statements about the strength of doctoral training but this needs to be followed up by a more quantitative analysis demonstrating impact and excellence. The submission provides too little information on mobility and how to further develop this area, and does not indicate how the group is managed and structured. The plan of action needs to provide clear goals about funding and other outcome targets.

## **2.13 RC-specific conclusions**

This submission needs to be developed further before it can be properly assessed. ENIGMA represents a strong group with the potential to form a clear vision aimed at tackling important scientific questions but the RC needs a clearer management structure and targets.

## **2.14 Preliminary findings in the Panel-specific feedback**

ENIGMA represents an under-developed RC that has potential to answer important questions about environmental management under climate change. The individual research groups are very strong but at the moment the submission does not indicate clearly how the groups will work together to develop as an exciting multidisciplinary and interdisciplinary unit. The RC needs to develop a clear plan of action and a management structure that can develop its vision further.

## **2.15 Preliminary findings in the University-level evaluation**

This submission demonstrates the limitations of bibliometrics – the group looks strong, but the RC lacks a clear vision. This might reflect confusion around the definition of an RC which could be tackled at the University of Helsinki level and has been incorporated into our recommendations.

# 3 Appendices

- A. Original evaluation material
  - a. Registration material – Stage 1
  - b. Answers to evaluation questions – Stage 2
  - c. List of publications
  - d. List of other scientific activities
- B. Bibliometric analyses
  - a. Analysis provided by CWTS/University of Leiden
  - b. Analysis provided by Helsinki University Library (66 RCs)



International evaluation of research and doctoral training  
at the University of Helsinki 2005-2010

RC-SPECIFIC MATERIAL FOR THE PEER REVIEW

NAME OF THE RESEARCHER COMMUNITY:

Environmental change and management (ENIGMA)

LEADER OF THE RESEARCHER COMMUNITY:

Professor Atte Korhola, Department of Environmental Sciences, Faculty of Biological and Environmental sciences

RC-SPECIFIC MATERIAL FOR THE PEER REVIEW:

- Material submitted by the RC at stages 1 and 2 of the evaluation
  - STAGE 1 material: RC's registration form (incl. list of RC participants in an excel table)
  - STAGE 2 material: RC's answers to evaluation questions
- TUHAT compilations of the RC members' publications 1.1.2005-31.12.2010
- TUHAT compilations of the RC members' other scientific activities 1.1.2005-31.12.2010
- Web of Science(WoS)-based bibliometrics of the RC's publications data 1.1.2005-31.12.2010 (analysis carried out by CWTS, Leiden University)

*NB! Since Web of Science(WoS)-based bibliometrics does not provide representative results for most RCs representing humanities, social sciences and computer sciences, the publications of these RCs will be analyzed by the UH Library (results available by the end of June, 2011)*



INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE  
UNIVERSITY OF HELSINKI

RC-SPECIFIC STAGE 1 MATERIAL (registration form)

1 RESPONSIBLE PERSON

Name: Korhola, Atte

E-mail:

Phone: 09191 57840

Affiliation: professor

Street address: Viikinkaari 1

2 DESCRIPTION OF THE PARTICIPATING RESEARCHER COMMUNITY (RC)

Name of the participating RC (max. 30 characters): Environmental change and management

Acronym for the participating RC (max. 10 characters): ENIGMA

Description of the operational basis in 2005-2010 (eg. research collaboration, joint doctoral training activities) on which the RC was formed (MAX. 2200 characters with spaces): The research community ENIGMA includes three research groups, those of prof. Atte Korhola (global environmental change), prof. Pekka Kauppi (sustainability science), and prof. Jari Niemelä (urban ecology). These research groups are the premier research environments within the Division of Environmental Change and Policy of the Dept. of Environmental Sciences. The three teams have in common their focus on multidisciplinary approaches to environmental change. They are also responsible for major proportion of research funding and doctoral training at the division. ENIGMA represents a strong, well-integrated, multidisciplinary research platform with particular expertise in various aspects of environmental changes and their societal implications. The research conducted in ENIGMA is at the interface of environmental science, ecology, forest sciences, aquatic sciences, palaeoecology, climatology, geoinformatics, and empirical ecosystem management. The participating groups have long tradition of conducting research in environmental issues and they are all internationally recognised as major contributors to their respective fields of study.

The central research theme of the research group of prof. Korhola is the development and application of empirical, computational and modeling tools to detect global environmental changes and to analyse their ecological and societal impacts with special emphasis on arctic environments. The research group of prof. Niemelä focuses on urban ecology, biodiversity and ecosystems in the changing cities. The main interests of the research group of prof. Kauppi concentrates on the carbon stocks in forests, industrial ecology and the nature protection. The members of these groups together form a research community whose expertise covers as well urban cities and industry as old-growth forests and pristine arctic ecosystems.

3 SCIENTIFIC FIELDS OF THE RC

Main scientific field of the RC's research: natural sciences

RC's scientific subfield 1: Environmental Sciences

RC's scientific subfield 2: --Select--



INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE  
UNIVERSITY OF HELSINKI

RC-SPECIFIC STAGE 1 MATERIAL (registration form)

RC's scientific subfield 3: --Select--

RC's scientific subfield 4: --Select--

Other, if not in the list:

4 RC'S PARTICIPATION CATEGORY

Participation category: 1. Research of the participating community represents the international cutting edge in its field

Justification for the selected participation category (MAX. 2200 characters with spaces): On the basis of the amount of international collaboration, number of peer-reviewed publications, existing multidisciplinary networks, international and national positions of trust received and a broad range of expertise, skills, and knowledge on different aspects of the environmental change and management research, the ENIGMA group is without dispute world top class. We have been coordinating and acted as central partners in numerous national, Nordic and European research projects, and we are part of a new Centre of Excellence in Cryospheric Research, CRAICC, awarded by NordForsk. We have three internationally well-known professors in our group, in addition to which many of our PIs are international forerunners in their respective field of study. In addition, Helsinki University has selected us (ECRU) as one of its own centers of excellence in research, based on our top qualification in the national centre of excellence call. The three professors of the group are highly visible figures in public debate on climate change, biodiversity and environmental decision making. They are also widely heard as experts and consultants by the Finnish Parliament, Departments of Government, enterprises, think tanks and NGOs.

5 DESCRIPTION OF THE RC'S RESEARCH AND DOCTORAL TRAINING

Public description of the RC's research and doctoral training (MAX. 2200 characters with spaces): The research of ENIGMA covers wide scale of environments – from urban cities to arctic ecosystems. ENIGMA consists of three research groups. Prof. Korhola leads the Environmental Change Research Unit (ECRU). The central research theme in the ECRU is the development and application of empirical, computational and modelling tools to detect global environmental changes and to analyse their ecological and societal impacts. The research group presently comprises more than 10 people with a wide spectrum of research interests and skills. The group is part of the Nordic Center of Excellence in Cryospheric research (CRAICC) and is involved in multiple international research collaborations and many international and national research programs, such as IPCC, AMAP, CAFF, ACIA, ICOS, including the leadership of the IGBP PAGES Arctic 2k Working Group. The research groups of prof. Niemelä focuses on urban ecology, biodiversity and ecosystems in the changing cities. Current research topics include, for instance, multidisciplinary approach on ecosystem services in urban areas and biodiversity maintenance in cities. Furthermore, some parts of the research focus on other issues in biodiversity and nature conservation research, such as forest biodiversity and conservation. Prof. Kauppi and his team concentrate on forests, industrial ecology and the nature protection. The important research queries are e.g. how much carbon exists in forests and how can forests serve climate policy. The research concerning industrial ecology tries to solve how to reduce waste. The group members also study heavy metals in the environment with special emphasis on spreading, behaviour and bioaccumulation of mercury and cadmium. Furthermore, the research group of Kauppi aims to study the human inflicted "upward" and "downward" forces (e.g. increasing affluence, development in





## INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE UNIVERSITY OF HELSINKI

### RC-SPECIFIC STAGE 1 MATERIAL (registration form)

technology, efficiency of resource consumption) behind the environmental problems connected to environmental changes.

Significance of the RC's research and doctoral training for the University of Helsinki (MAX. 2200 characters with spaces): In all, ENIGMA has been highly successful in training several PhD students within the last six years, which many have achieved high grades from their theses and continued their scientific careers abroad or in Finland. The group currently has 12 doctoral students, covering a wide range of disciplines and research interests from both ecological and societal dimensions of environmental change. The group is actively participating in many national graduate schools, including the Arctic graduate School ARKTIS that also has strengthened the ambitiousness target of the group to educate and train excellent students that also have demand in labour markets. Thus, the research and doctoral training of the RC is of significance to the university.

Keywords: sustainability science, climate change, urban ecology, biodiversity, global environmental change

#### 6 QUALITY OF RC'S RESEARCH AND DOCTORAL TRAINING

Justified estimate of the quality of the RC's research and doctoral training at national and international level during 2005-2010 (MAX. 2200 characters with spaces): On the basis of the amount of international collaboration, number of peer-reviewed publications, existing multidisciplinary networks, international and national positions of trust received and a broad range of expertise, skills, and knowledge on different aspects of the environmental change and management research, the ENIGMA group is without dispute world top class. We have been coordinating and acted as central partners in numerous national, Nordic and European research projects, and we are part of a new Centre of Excellence in Cryospheric Research, CRAICC, awarded by NordForsk. We have three internationally well-known professors in our group, in addition to which many of our PIs are international forerunners in their respective field of study. In addition, Helsinki University has selected us (ECRU) as one of its own centers of excellence in research, based on our top qualification in the national centre of excellence call. The three professors of the group are highly visible figures in public debate on climate change, biodiversity and environmental decision making. They are also widely heard as experts and consultants by the Finnish Parliament, Departments of Government, enterprises, think tanks and NGOs.

Comments on how the RC's scientific productivity and doctoral training should be evaluated (MAX. 2200 characters with spaces): Review of research outputs in the form of publications and other activities, interview with members of the RC and evaluating also the societal implications of the research results of the RC.

# LIST OF RC MEMBERS

NAME OF THE RESEARCHER COMMUNITY:			ENIGMA		
RC-LEADER			A. Korhola		
CATEGORY			1		
	Last name	First name	PI-status (TUHAT, 29.11.2010)	Title of research and teaching personnel	Affiliation
1	Albert	Raino-Lars		Doctoral candidate	Ecomonitor OY
2	Forsström	Laura		Postdoctoral Researcher	UH, Faculty of Biological and Environmental sciences, Dept. Environmental Sciences
3	Fronzek	Stefan		Doctoral candidate	Finnish Environmental Institute
4	Hamberg	Leena		Doctoral candidate	Finnish Forest Res Institute
5	Hanhijärvi	Sami		Postdoctoral Researcher	UH, Faculty of Biological and Environmental sciences, Dept. Environmental Sciences
6	Hauru	Kaisa		Doctoral candidate	UH, Faculty of Biological and Environmental sciences, Dept. Environmental Sciences
7	Hsueh	I-Chen		Doctoral candidate	UH, Faculty of Biological and Environmental sciences, Dept. Environmental Sciences
8	Kauppi	Pekka	x	Professor	UH, Faculty of Biological and Environmental sciences, Dept. Environmental Sciences
9	Korhola	Atte	x	Professor	UH, Faculty of Biological and Environmental sciences, Dept. Environmental Sciences
10	Korkonen	Sanna		Doctoral candidate	UH, Faculty of Biological and Environmental sciences, Dept. Environmental Sciences
11	Kotze	Johan	x	University Researcher	UH, Faculty of Biological and Environmental sciences, Dept. Environmental Sciences
12	Lehvavirta	Susanna	x	Postdoctoral Researcher	UH, Faculty of Biological and Environmental sciences, Finnish Museum of Natural Sciences
13	Liljendahl	Anne	x	Postdoctoral Researcher	UH, Faculty of Biological and Environmental sciences, Dept. Environmental Sciences
14	Lodenius	Martin		University Lecturer	UH, Faculty of Biological and Environmental sciences, Dept. Environmental Sciences
15	Malmivaara-Lämsä	Minna		Doctoral candidate	Finnish Forest Res Institute
16	Matveinne-Huju	Katja		Doctoral candidate	Ministry of Agriculture and Forestry
17	Mayer	Audrey		University Researcher	Michigan Tech University
18	Niemelä	Jari	x	Professor	UH, Faculty of Biological and Environmental sciences, Dept. Environmental Sciences
19	Nyman	Marjut		Doctoral candidate	UH, Department of Physics
20	Rainio	Johanna		Doctoral candidate	UH, Faculty of Biological and Environmental sciences, Dept. Environmental Sciences
21	Rautiainen	Aapo		Doctoral candidate	UH, Faculty of Biological and Environmental sciences, Dept. Environmental Sciences
22	Ronkainen	Tiina		Doctoral candidate	UH, Faculty of Biological and Environmental sciences, Dept. Environmental Sciences
23	Ruppel	Meri		Doctoral candidate	UH, Faculty of Biological and Environmental sciences, Dept. Environmental Sciences
24	Saarikivi	Jarmo		Doctoral candidate	UH, Faculty of Biological and Environmental sciences, Dept. Environmental Sciences
25	Siitonen	Susanna		Doctoral candidate	UH, Faculty of Biological and Environmental sciences, Dept. Environmental Sciences
26	Ståhls	Monika		Doctoral candidate	UH, Faculty of Biological and Environmental sciences, Dept. Environmental Sciences
27	Tikka	Päivi		University Researcher	M & T Nessling Foundation
28	Vaalgamaa	Sanna		Postdoctoral Researcher	UH, Faculty of Biological and Environmental sciences, Dept. Environmental Sciences
29	Weckström	Jan	x	University Researcher	UH, Faculty of Biological and Environmental sciences, Dept. Environmental Sciences
30	Weckström	Kaarina		Postdoctoral Researcher	Geological Survey of Denmark and Greenland (GEUS)
31	Venn	Stephen		Doctoral candidate	UH, Faculty of Biological and Environmental sciences, Dept. Environmental Sciences
32	Virtanen	Tarmo	x	University Lecturer	UH, Faculty of Biological and Environmental sciences, Dept. Environmental Sciences
33	Väliranta	Minna	x	Postdoctoral Researcher	UH, Faculty of Biological and Environmental sciences, Dept. Environmental Sciences



INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE  
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RC-SPECIFIC STAGE 2 MATERIAL

BACKGROUND INFORMATION

Name of the RC's responsible person: Korhola, Atte

E-mail of the RC's responsible person:

Name and acronym of the participating RC: Environmental change and management, ENIGMA

The RC's research represents the following key focus area of UH: 1. Maailman perusrakenne, materiaalit ja luonnonvarat – The basic structure, materials and natural resources of the physical world

Comments for selecting/not selecting the key focus area:

1 FOCUS AND QUALITY OF RC'S RESEARCH (MAX. 8800 CHARACTERS WITH SPACES)

- **Description of the RC's research focus, the quality of the RC's research (incl. key research questions and results) and the scientific significance of the RC's research for the research field(s).**

Our research community, ENIGMA, includes three research groups (lead by professors Kauppi, Korhola and Niemelä) each having a specific angle to the ecosystem services, which is the key research question of the RC. The quality of the ENIGMA's research is high as evidenced by the high-quality publications produced by the RC and the visionary role in the field of science. The term 'ecosystem services' was popularized and their definitions formalized by the Millennium Ecosystem Assessment, the group of researchers, which included also our prof. Pekka Kauppi. Our research covers wide scale from forestry and industry to the pristine Arctic and from the wilderness via urban areas to the ecosystem services within cities. Prof. Pekka Kauppi's group has specialized on ecosystem services of the global forests and on the sustainability of industrial and agricultural material flows. Arctic ecosystems under global climate and other environmental changes are the main focus of prof. Atte Korhola's group. The work of prof. Jari Niemelä's group has a strong focus on direct ecosystem impacts of urbanization. Prof. Niemelä's group is also strong on research dealing with ecosystem services in cities. Each of our three groups is specialized to the different ecosystems, but our approach as a research community is to achieve a holistic socio-ecological approach to the study we do.

Many members of our RC address northern ecosystems – boreal forests, sub-arctic ecosystems and arctic regions. The global North represents invaluable natural resources, pristine and vital but vulnerable ecosystems, highly variable, aesthetically appealing and largely undisturbed landscapes. Our research community has enthusiastically studied the boreal and arctic biodiversity and the study has provided guidelines for modifying management practices in order to maintain biodiversity. Testing the 'boomerang hypothesis' invented by our RC was one of major projects during the evaluation period 2005-2010. The aim of the project was to study whether the increasing import of natural resources can negatively affect biodiversity conservation planning if natural resource harvest is merely pushed across political borders. The results of the study were published in international journals including Science.

Climate change is related to many of our research themes. To understand and predict the future of the Globe, northern regions offer an important research platform. Also urban areas are in focus in climate change research. Climatic effects on ecosystems can only be detected when long-term data are available. Long-term time series define the range of natural variability of climate and ecological systems and provide a baseline from which to assess whether a system has changed significantly. It is important to realise that whatever anthropogenic climate changes occur in the future, they will be superimposed on a background of natural variability. Therefore, to anticipate future changes, we must understand how and why climates and ecosystems varied in the past. In our RC, several members deal with



## INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE UNIVERSITY OF HELSINKI

### RC-SPECIFIC STAGE 2 MATERIAL

palaeolimnology and palaeoecology. During the evaluation period, our researchers have mainly been using biological lake sediment data to hindcast climate change and ecosystem response, but also new palaeoecological methods have been tested. Just at the end of the evaluation period, a new, large consortium effort funded by Academy of Finland was started. The project aims to assess the impacts of climate change on Arctic environment, ecosystem services and society. The consortium is comprised of physical and life scientists as well as anthropologists and sociologists.

Urbanization and globalization are key drivers of changes in global ecosystem services. Urban ecology is a young but rapidly expanding field, and researchers in prof. Niemelä's team are in the forefront of this field both in Finland and internationally. Our urban research promotes a holistic socio-ecological approach to the study of urban ecology and environmental issues in cities. The research includes contemporary and emerging issues in urban ecology with a focus on ecosystem services in urban environments. For instance, researchers have studied and advanced the use of the ecosystem services approach in urban planning in Finland. This research deals on the one hand with natural science ecology in urban areas, and on the other hand with the interface between natural sciences and social sciences, including ecosystem services. In particular, this latter approach has produced many innovative results as exemplified by the research publications listed. Prof. Niemelä, in collaboration with colleagues, has published both in Finnish and in English about urban ecosystem services. The most recent example of focus and success in research is the publication of a comprehensive book on urban ecology by Oxford University Press in which prof. Niemelä served as an editor-in-chief (J. Niemelä et al (eds). 2011. Urban ecology: patterns, processes and applications).

- **Ways to strengthen the focus and improve the quality of the RC's research.**

There are excellent future opportunities of increased synergy between the individual scientists of the RC. The RC aims at joint publications on global and universal impacts of urbanization and globalization on ecosystem services in boreal, sub-arctic and arctic environments. Enhanced collaboration between natural scientists and social scientists will produce a better understanding of the functioning and relationships between ecosystems and human society. The RC members are devoted to teach their latest research at University of Helsinki both at under graduate and graduate level.

#### 2 PRACTISES AND QUALITY OF DOCTORAL TRAINING (MAX. 8800 CHARACTERS WITH SPACES)

- How is doctoral training organised in the RC? Description of the RC's principles for recruitment and selection of doctoral candidates, supervision of doctoral candidates, collaboration with faculties, departments/institutes, and potential graduate schools/doctoral programmes, good practises and quality assurance in doctoral training, and assuring good career perspectives for the doctoral candidates/fresh doctorates.

Doctoral training in Finland is based on competitive research grants. The recruitment of doctoral candidates takes place after a positive funding decision. The PIs submit an announcement to their respective departments/faculties. The selection is based on the candidates demonstrated abilities and merits. All the doctoral students must be approved by a faculty and must be enrolled at a faculty.

We collaborate closely with the Arctic Centre at the University of Lapland, which coordinates a multidisciplinary doctoral program, The ARKTIS. The joint research theme of the program is 'Social and Environmental Impacts of Modernization and Global Change in the Arctic'. The ARKTIS has also a specific sub-theme called 'Resource, political and environmental economics in promoting sustainable social development in the Barents Euro-Arctic area' (since 2010). ARKTIS has 18 research students enrolled at the universities of Lapland, Oulu, Joensuu and Helsinki. Three of them, Raino-Lars Albert, Susanna Siitonen and Meri Ruppel, are members of our RC.



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### RC-SPECIFIC STAGE 2 MATERIAL

Supervision takes place interactively in the research teams lead by professors. This kind of team work is very efficient in supervising students and for securing high quality of PhD work. Viikki campus offers an excellent working environment to PhD-students both in every-day life and in terms of the scientific infrastructure. Good practices include close supervision, encouragement and common activities, such as seminars, meetings and workshops within the research teams. For assuring good career perspectives the doctoral candidates must obtain a high-quality education and they also must be provided with guidelines and assistance in selecting a suitable career. This RC has chosen to encourage PhD-student to submit their manuscripts to peer reviewed scientific journals. Published journal articles are the core of a typical PhD-thesis completed within this RC.

- RC's strengths and challenges related to the practises and quality of doctoral training, and the actions planned for their development.

Multidisciplinarity is strength of the RC's doctoral training. On the other hand, multidisciplinary is a challenge as students need to get a sufficiently deep understanding of their particular field but at the same time gain understanding and appreciation of other fields.

3 SOCIETAL IMPACT OF RESEARCH AND DOCTORAL TRAINING (MAX. 4400 CHARACTERS WITH SPACES)

- Description of how the RC interacts with and contributes to the society (collaboration with public, private and/or 3rd sector).

Due to our research questions and the field of science, the societal impacts of the research are strong, since ecosystem services, climate change, globalization and urbanization concerns everybody in this planet. The professors of the RC in 2005-2010 have served as experts to governmental committees and working groups, attended meetings, seminars and workshop at the Parliament of Finland, have discussed issues of ecosystems services with the President of Finland, Ms. Tarja Halonen, with the Prime Minister and with several Cabinet Members. Each professor of the RC is keen on popularizing science and has his own channel for collaboration with public. Professor Kauppi served (in 2009-2010) as the Chairman of Finnish Forest Association (Suomen Metsäyhdistys), a large national NGO. Professor Korhola is the Vice-Dean of Societal Interactions of the Faculty of Biological and Environmental Sciences and he has several positions of trust in the public sector. For example, he is a fellow of Finnish Business and Policy Forum (EVA) and has been consultant and adviser also for the Confederation of Finnish Industries (EK), the Finnish Innovation Fund (SITRA), the Finnish Funding Agency for Technology and Innovation (TEKES) and several companies/enterprises in Climate matters. He is also very active in media. Among other positions of trust, Prof. Niemelä is chairman of the Helsinki University Centre for Environment (HENVI) which is an umbrella organization covering all faculties at the university. One of the aims of HENVI is to serve as an active disseminator of environmental research knowledge into the society.

Our RC collaborates with sectoral research institutes and government agencies such as the Finnish Environment Institute (SYKE), Technical Research Center (VTT), and Finnish Forest Research Institute (METLA). Young researches from these organizations attend the PhD-program of the RC, and many RC publications are co-authored by scientists from these organizations. Prof Niemelä's research team is especially active in the science-policy interface. In particular, the team collaborates actively with different actors in the society. The main collaborators are municipalities in the Helsinki Metropolitan area (Helsinki, Vantaa, Espoo, Lahti). The idea is to make sure that research results obtained are communicated to these stakeholders so that the research has an impact on management and decision-making. Furthermore, research needs are discussed with the stakeholders and some of the needs identified have resulted in research projects. There are several examples of how researchers and managers/decision-makers interact. For instance, prof. Niemelä is currently involved as an invited



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### RC-SPECIFIC STAGE 2 MATERIAL

ecology expert in the planning of a large, new residential area east of Helsinki. Prof. Niemelä is also involved in an EU funded project examining ways to strengthen the science-policy interface in the biodiversity management.

- Ways to strengthen the societal impact of the RC's research and doctoral training.

Ways to strengthen the societal impact of the RC's research and doctoral training include even more active interactions with the stakeholders. Furthermore, collaboration with the relevant government institutions is progressing (e.g. Ministry of the Environment and research institutes). This collaboration takes many forms, such as individual discussions, workshops, seminars and publications target at these audiences. In addition, prof. Niemelä is chairman of the board of WWF Finland thereby making a direct input into the policies and activities of one of the most influential environmental NGOs in Finland.

#### 4 INTERNATIONAL AND NATIONAL (INCL. INTERSECTORAL) RESEARCH COLLABORATION AND RESEARCHER MOBILITY (MAX. 4400 CHARACTERS WITH SPACES)

- Description of the RC's research collaborations and joint doctoral training activities and how the RC has promoted researcher mobility.

As mentioned earlier, the RC collaborates with sectoral research institutes and government agencies such as the Finnish Environment Institute (SYKE), Technical Research Center (VTT), and Finnish Forest Research Institute (METLA). Young researchers from these organizations attend the PhD-program of the RC, and many RC publications are co-authored by scientists from these organizations. Also collaboration within University of Helsinki (Dept. of Geosciences and Geography, professors Heikki Seppä and Miska Luoto and Dept. Forest Ecology, Dr. Eeva-Stiina Tuittila) and other Finnish universities is close, especially with Department of Geography, Thule Institute and Department of Mathematics in University of Oulu.

Our international co-operation includes both research collaboration and doctoral training activities. Several PhD-students has been sent abroad to learn special methodological research skills, for example Meri Ruppel has been in Environmental Change Research Centre in UCL, UK, Tiina Ronkainen in School of Geography, Politics and Sociology in Newcastle University, UK and Sanna Korkonen in Institute of Geography in University of Bern, Switzerland. After the dissertation, new post docs are encouraged to apply international positions, such as Marie Curie Postdoctoral Research Fellowship.

Prof. Niemelä collaborates with several research teams in different countries, including Prof. Philip James (University of Salford, UK), prof. Thomas Elmqvist (University of Stockholm, Sweden), and prof. John Spence (University of Alberta, Canada). This collaboration has resulted in several joint publications. Prof. Niemelä is currently partner in one EU-funded project. Professor Kauppi in 2005-2010 collaborated especially with colleagues at Rockefeller University (professor Jesse H. Ausubel), with Peking University (professor Jingyun Fang), with University of Aberdeen (professor Alexander Mather) and with the University of Leeds (Dr. Alan Grainger). During the evaluation period, professor Korhola's group has collaborated with several scientists in United Kingdom (e.g. Dr. Erin McClymont and Dr. Steve Juggins from Newcastle University and Dr. Neil Rose from University College of London,) and Canada (prof. John Smol from Queen's University and prof. Milla Rautio from Université du Québec à Chicoutimi).

- RC's strengths and challenges related to research collaboration and researcher mobility, and the actions planned for their development.

The RC's strengths related to research collaboration include the wide range of collaborators across the world. This provides an opportunity to acquire the latest knowledge and develop joint projects. However, financial problems and personal issues (e.g. family ties) might hinder the mobility of researchers.



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RC-SPECIFIC STAGE 2 MATERIAL

5 OPERATIONAL CONDITIONS (MAX. 4400 CHARACTERS WITH SPACES)

- Description of the operational conditions in the RC's research environment (e.g. research infrastructure, balance between research and teaching duties).

For the entire RC, the setting in Viikki campus is nearly ideal. However, the number of under graduate students is very high generating not only advantages but also significant disadvantages to carrying out successful scientific research.

Prof. Niemelä operates in a functional research environment. The needed equipment is on place. Prof. Niemelä is currently the dean of the Faculty of Biological and Environmental Sciences and thus administration takes a considerable proportion of this time. He is also on the chair of the board of Helsinki University Centre for Environment (HENVI) which is an umbrella organization covering the environmental research and teaching at the University of Helsinki.

- RC's strengths and challenges related to operational conditions, and the actions planned for their development.

Field work, especially in Arctic regions is arduous and expensive due to the long and difficult distances, and often not only special vehicles (snowmobiles, helicopters and ATV's) but also special skills are needed.

6 LEADERSHIP AND MANAGEMENT IN THE RESEARCHER COMMUNITY (MAX. 4400 CHARACTERS WITH SPACES)

- Description of the execution and processes of leadership in the RC, how the management-related responsibilities and roles are distributed in the RC and how the leadership- and management-related processes support high quality research, collaboration between principal investigators and other researchers in the RC, the RC's research focus and strengthening of the RC's know-how.

The RC members believe in the creativity of individual members of the group, each member including the PhD-students supporting one another and contributing to the preparation of journal articles drawing on their personal intellectual assets. The professors, of course, must draw on their working experience and lead the preparation of research applications.

- RC's strengths and challenges related to leadership and management, and the actions planned for developing the processes.

An improvement in the working conditions of the RC is to be expected in 2011. Professor Niemelä's and professor Kauppi's groups will move to a common office space, which will be located very close to the office of professor Korhola's group. Therefore, the opportunities for daily contacts will improve.

7 EXTERNAL COMPETITIVE FUNDING OF THE RC

- Listing of the RCs external competitive funding, where:
  - the funding decisions have been made during 1.1.2005-31.12.2010, and
  - the administrator of the funding is/has been the University of Helsinki
- Academy of Finland (AF) - total amount of funding (in euros) AF has decided to allocate to the RC members during 1.1.2005-31.12.2010: 2730000



## INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE UNIVERSITY OF HELSINKI

### RC-SPECIFIC STAGE 2 MATERIAL

- Finnish Funding Agency for Technology and Innovation (TEKES) - total amount of funding (in euros) TEKES has decided to allocate to the RC members during 1.1.2005-31.12.2010:
- European Union (EU) - total amount of funding (in euros) EU has decided to allocate to the RC members during 1.1.2005-31.12.2010: 260000
- European Research Council (ERC) - total amount of funding (in euros) ERC has decided to allocate to the RC members during 1.1.2005-31.12.2010:
- International and national foundations – names of international and national foundations which have decided to allocate funding to the RC members during 1.1.2005-31.12.2010, and the amount of their funding (in euros).
  - names of the foundations: Koneen säätiö, Kulttuurirahaston säätiö, Maj and Tor Nessling Foundation
  - total amount of funding (in euros) from the above-mentioned foundations: 360000
- Other international funding - names of other international funding organizations which have decided to allocate funding to the RC members during 1.1.2005-31.12.2010, and the amount of their funding (in euros).
  - names of the funding organizations: Stockholm University
  - total amount of funding (in euros) from the above-mentioned funding organizations: 40000
- Other national funding (incl. EVO funding and Ministry of Education and Culture funded doctoral programme positions) - names of other national funding organizations which have decided to allocate funding to the RC members during 1.1.2005-31.12.2010, and the amount of their funding (in euros).
  - names of the funding organizations: University of Helsinki
  - total amount of funding (in euros) from the above-mentioned funding organizations: 90000

#### 8 RC'S STRATEGIC ACTION PLAN FOR 2011–2013 (MAX. 4400 CHARACTERS WITH SPACES)

- Description of the RC's future perspectives in respect to research and doctoral training.

The main challenge of the RC is to (1) maintain the high standard of scientific work as achieved during 2005-2010, (2) strengthen interdisciplinarity and collaboration among researchers, (3) secure future research funding, (4) secure the development of currently under-resourced fields of research and to strengthen collaboration with the Helsinki University Centre for Environment.

The maintenance of high quality research is imperative for securing future research funding. Collaboration between teams will enhance possibilities of preparing high-quality applications that are successful in attracting funding. Furthermore, international collaboration in acquiring research funding is needed. Intensification of the RC's contributions to HENVI activities, such seminars and lectures will enhance collaboration between this RC and other environmental scientists at Univ. of Helsinki. Active work is needed within the University and with external partners to strengthen under-resourced fields (such as environmental social sciences).

#### 9 SHORT DESCRIPTION OF HOW THE RC MEMBERS HAVE CONTRIBUTED TO THE COMPILATION OF THE STAGE 2 MATERIALS (MAX. 1100 CHARACTERS WITH SPACES).

Each member wrote an answer to each question.





# INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE UNIVERSITY OF HELSINKI

## RC-SPECIFIC TUHAT COMPILATIONS OF PUBLICATIONS DATA 2005-2010

ENIGMA/Korhola

### 1 Analysis of publications

- Associated person is one of Laura Forsström , Sami Tapio Hanhijärvi , Pekka Kauppi ,  
Atte Korhola , Sanna Korkonen , David Johannes Kotze ,  
Susanna Lehvävirta , Anne Liljendahl , Martin Lodenius , Katja Matveinen-  
Huju, Jari Niemelä , Marjut Talvicki Nyman , Johanna Rainio , Aapo Rautiainen ,  
Tiina Ronkainen , Meri Ruppel , Jarmo Saarikivi ,  
Susanna Siitonen , Monika Ståhls , Päivi Tikka , Sanna Vaalgamaa ,  
Jan Weckström , Kaarina Weckström , Stephen Venn ,  
Tarmo Virtanen , Minna Välranta ,

Publication type	Publication Year						Total Count 2005 - 2010
	2005	2006	2007	2008	2009	2010	
A1 Refereed journal article	22	24	18	22	23	24	133
A2 Review in scientific journal			1	2			3
A3 Contribution to book/other compilations (refereed)	2	14		1	5	1	23
A4 Article in conference publication (refereed)	4				1		5
B1 Unrefereed journal article	2	1	2	4	3	1	13
B2 Contribution to book/other compilations (non-refereed)		4	1		3		8
B3 Unrefereed article in conference proceedings	1	3	2	1	2	3	12
C1 Published scientific monograph			1		1		2
C2 Edited book, compilation, conference proceeding or special issue of journal	2				3		5
D1 Article in professional journal			1		1	1	3
D3 Article in professional conference proceedings					1		1
D4 Published development or research report						1	1
D5 Text book or professional handbook or guidebook or dictionary	1						1
E1 Popular article, newspaper article	2	2	2	1	4	3	14
E2 Popular monograph	1	1		2			4



## INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE UNIVERSITY OF HELSINKI

### RC-SPECIFIC TUHAT COMPILATIONS OF PUBLICATIONS DATA 2005-2010

ENIGMA/Korhola

## 2 Listing of publications

### A1 Refereed journal article

#### 2005

- Curtis, C.J., Botev, I., Camarero, L., Catalan, J., Cogalniceanu, D., Hughes, M., Kernan, M., Kopacek, J., Korhola, A., Psenner, R., Rogora, M., Stuchlik, E., Veronesi, M., Wright, R.F. **2005**, 'Acidification in European mountain lake districts: A regional assessment of critical load exceedance', **Aquatic Sciences**, vol 67, no. 3, pp. 237-251.
- Forsström, L., Sorvari, S., Korhola, A., Rautio, M. **2005**, 'Seasonality of phytoplankton in subarctic Lake Saanajarvi in NW Finnish Lapland', **Polar Biology**, vol 28, no. 11, pp. 846-861.
- Grandchamp, A., Bergamini, A., Stofer, S., Niemelä, J., Duelli, P., Scheidegger, C. **2005**, 'The influence of grassland management on ground beetles (Carabidae, Coleoptera) in Swiss montane meadows', **Agriculture, Ecosystems & Environment**, vol 110, no. 3-4, pp. 307-317.
- Horppila, J., Liljendahl, A.K. **2005**, 'Clay-turbid interactions may not cascade - a reminder for lake managers', **Restoration Ecology**, vol 13, no. 2, pp. 242-246.
- Kauppila, P., Weckström, K., Vaalgamaa, S., Korhola, A., Pitkänen, H., Reuss, N., Drew, S. **2005**, 'Tracing pollution and recovery using sediments in an urban estuary, northern Baltic Sea: are we far from ecological reference conditions?', **Marine Ecology - Progress Series**, vol 290, pp. 35-53.
- Kauppila, P., Pitkänen, H., Korhola, A., Pellikka, K., Vaalgamaa, S., Weckström, K. **2005**, 'Assessing ecological status of an urban estuary in the northern Baltic Sea and its recovery from pollution', **Verhandlungen der Internationalen Vereinigung für theoretische und angewandte Limnologie**, vol 29, pp. 221-225.
- Kepanen, A., Lodenius, M., Tulisalo, E., Hartikainen, H. **2005**, 'Effects of different wood ashes on the solubility of cadmium in two boreal forest soils', **Boreal Environment Research**, vol 10, no. 2, pp. 135-143.
- Koivula, M.J., Kotze, D.J., Salokannel, J. **2005**, 'Beetles (Coleoptera) in central reservations of three highway roads around the city of Helsinki, Finland', **Annales Zoologici Fennici**, vol 42, pp. 615-626.
- Korhola, A., Tikkanen, M., Weckström, J. **2005**, 'Quantification of holocene lake-level changes in Finnish Lapland using a cladocera: lake depth transfer model', **Journal of Paleolimnology**, vol 34, no. 2, pp. 175-190.
- Lawes, M.J., Kotze, D.J., Bourquin, S.L., Morris, C. **2005**, 'Epigeic invertebrates as potential ecological indicators of afro-montane forest condition in South Africa', **Biotropica**, vol 37, pp. 109-118.
- Liljendahl-Nurminen, A., Horppila, J., Eloranta, P., Valtonen, S., Pekcan-Hekim, Z. **2005**, 'Searching for the missing peak – an enclosure study on the seasonal succession of cladocerans in Lake Hiidenvesi', **Archiv für Hydrobiologie Special Issues Advances in Limnology**, vol 59, pp. 85-103.
- Mayer, A.L., Kauppi, P.E., Angelstam, P.K., Zhang, Y., Tikka, P.M. **2005**, 'Importing timber, exporting ecological impact', **Science**, vol 308, pp. 359-360.
- Niemelä, J., Young, J., Alard, D., Askasibar, M., Henle, K., Johnson, R., Kurttila, M., Larsson, T., Matouch, S., Nowicki, P., Paiva, R., Portogheisi, L., Smulders, R., Stevenson, A., Tartes, U., Watt, A. **2005**, 'Identifying, managing and monitoring conflicts between forest biodiversity conservation and other human interests in Europe', **Forest Policy and Economics**, vol 7, no. 6, pp. 877-890.
- Nyman, M., Korhola, A. **2005**, 'Chironomid-based classification of lakes in western Finnish Lapland', **Boreal Environment Research**, vol 10, no. 4, pp. 239-254.
- Nyman, M., Korhola, A., Brooks, S.J. **2005**, 'The distribution and diversity of Chironomidae (Insecta: Diptera) in western Finnish Lapland, with special emphasis on shallow lakes', **Global Ecology and Biogeography**, vol 14, no. 2, pp. 137-153.
- Roslin, T., Kotze, D. **2005**, 'Preface: insects and plants in space', **Annales Zoologici Fennici**, vol 42, no. 4, pp. 291-294.
- Smol, J.P., Wolfe, A.P., Birks, H.J.B., Douglas, M.S.V., Jones, V.J., Korhola, A., Pienitz, R., Ruhland, K., Sorvari, S., Antoniades, D., Brooks, S.J., Fallu, M., Hughes, M., Keatley, B.E., Laing, T.E., Michelutti, N., Nazarova, L., Nyman, M., Paterson, A.M., Perren, B., Quinlan, R., Rautio, M., Saulnier-Talbot, E., Siitonen, S., Solovieva, N., Weckström, J. **2005**, 'Climate-driven regime shifts in the biological communities of arctic lakes', **Proceedings of the National Academy of Sciences of the United States of America**, vol 102, no. 12, pp. 4397-4402.
- Thompson, R., Price, D., Cameron, N., Jones, V., Bigler, C., Rosen, P., Hall, R.I., Catalan, J., Garcia, J., Weckström, J., Korhola, A. **2005**, 'Quantitative calibration of remote mountain-lake sediments as climatic recorders of air temperature and ice-cover duration', **Arctic, Antarctic, and Alpine Research**, vol 37, no. 4, pp. 626-635.
- Vanbergen, A.J., Woodcock, B.A., Watt, A.D., Niemelä, J. **2005**, 'Effect of land-use heterogeneity on carabid communities at the landscape scale', **Ecography**, vol 28, no. 1, pp. 3-16.
- Väliiranta, M., Kultti, S., Nyman, M.T., Sarmaja-Korjonen, K.M. **2005**, 'Holocene development of aquatic vegetation in shallow Lake Njargajavri, Finnish Lapland, with evidence of water-level fluctuations and drying', **Journal of Paleolimnology**, vol 34, pp. 203-215.



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### RC-SPECIFIC TUHAT COMPILATIONS OF PUBLICATIONS DATA 2005-2010

#### ENIGMA/Korhola

Yli-Pelkonen, V, Niemelä, J **2005**, 'Linking ecological and social systems in cities: urban planning in Finland as a case', **Biodiversity and Conservation**, vol 14, no. 8, pp. 1947-1967.

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#### A2 Review in scientific journal

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### **B2 Contribution to book/other compilations (non-refereed)**

#### **2006**

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#### C1 Published scientific monograph

##### **2007**

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#### C2 Edited book, compilation, conference proceeding or special issue of journal

##### **2005**

Penev, L, Niemelä, J, Kotze, DJ, Chipev, N (eds) **2005**, *Ecology of the City of Sofia. Species and Communities in an Urban Environment*, **Pensoft Publishers**.

Roslin, T, Kotze, D (eds) **2005**, *Spatial ecology of herbivorous insects*, **Annales Zoologici Fennici**, no. 4, vol. 42, vol. 42, Finnish Zoological and Botanical Publishing Board, Helsinki.

##### **2009**

Clark, P, Niemi, M, Niemelä, JK (eds) **2009**, *Sport, recreation and green space in the European city*, **Studia Fennica. Historica**, no. 16, **SKS Finnish Literature Society**, Helsinki.

Kotze, D, O'Hara, R (eds) **2009**, *Methods in Ecological Research*, **Annales zoologici fennici**, no. 2, vol. 46.

Weckström, J, Weckström, K, Tuovinen, N, Albert, R, Korkonen, S (eds) **2009**, *XIX Nordic Diatomists' Meeting 2009: program and abstracts* : Övik, Porvoo, 27.-30.4.2009, **Turun yliopiston maaperägeologian osaston julkaisuja**, no. 86, University of Turku, Turku.

#### D1 Article in professional journal

##### **2007**

Schulman, L, Lehvävirta, S **2007**, 'Kasvitieteellisten puutarhojen EU-konsortio: mikä se on ja mitä se tekee?', **Pimpinella : kasvitieteellisten puutarhojen tiedotuslehti**, vol 26, no. 1, pp. 5-6.

##### **2009**

Tikka, P, Järvinen, E **2009**, 'Ympäristömuutos yhdisti suomalaistutkijat', **Kemia - Kemi**, vol 2009, no. 1, pp. 33.

##### **2010**

Schulman, L, Lehvävirta, S, Hällfors, M **2010**, 'Kasvitieteelliset puutarhat luotsaavat kasvimaailmaa ilmaston muuttuessa: EuroGard V, Euroopan kasvitieteellisten puutarhojen viides kongressi', **Luonnontieteellinen keskusmuseo**, vol 2008-2009, pp. 12-13.

#### D3 Article in professional conference proceedings

##### **2009**

Niemelä, J **2009**, 'Development and auditing of the quality management system of the University of Helsinki', in **Trends of quality assurance and quality management in higher education**, pp. 109-111.

#### D4 Published development or research report

##### **2010**

Niemelä, J, Ahola, S, Blomqvist, C, Juusola, H, Karjalainen, M, Lijander, J, Mielityinen, I, Oikarinen, K, Moitus, S, Mattila, J **2010**, *Tutkinnonuudistuksen arviointi 2010, Korkeakoulujen arviointineuvoston julkaisuja*, no. 17, vol. 2010, vol. 17, **Korkeakoulujen arviointineuvosto**, Helsinki.



## INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE UNIVERSITY OF HELSINKI

### RC-SPECIFIC TUHAT COMPILATIONS OF PUBLICATIONS DATA 2005-2010

ENIGMA/Korhola

#### **D5 Text book or professional handbook or guidebook or dictionary**

##### **2005**

Heikkilä, R, Korhola, A, Tikkanen, M **2005**, *Suo ekosysteeminä ja luonnon kehityshistorian arkistona*, **Helsingin yliopiston maantieteen laitoksen opetusmonisteita, no. 47, Helsingin Yliopisto, Helsinki.**

#### **E1 Popular article, newspaper article**

##### **2005**

Hilden, M, Niemelä, J **2005**, 'Biodiversiteettiä turvataan yrityksen ja erehdyksen kautta', **Helsingin Sanomat**, pp. A2.

Lodenius, M **2005**, 'BER:n juhlat', **Ilmansuojelu**, vol 2005, no. 1, pp. 5.

##### **2006**

Korhola, A **2006**, 'Tutkimusrahoituksen jakoon lisää läpinäkyvyyttä', **Helsingin Sanomat**.

Niemelä, J **2006**, 'Biodiversiteetin köyhtymistä vaikea pysäyttää tavoiteajassa', **Helsingin Sanomat**, pp. A2.

##### **2007**

Lehvävirta, S **2007**, 'Susanna Lehvävirta, projektipäällikkö, Helsinki', **Pimpinella : kasvitieteellisten puutarhojen tiedotuslehti**, vol 26, no. 1, pp. 23-24.

Schulman, L, Lehvävirta, S **2007**, 'Kasvitieteellisten puutarhojen EU-konsortio: mikä se on ja mitä se tekee?', **Pimpinella : kasvitieteellisten puutarhojen tiedotuslehti**, vol 26, no. 1, pp. 5-6.

##### **2008**

Lehvävirta, S **2008**, 'EuroGard V', **Pimpinella : kasvitieteellisten puutarhojen tiedotuslehti**, vol 26, no. 2, pp. 16-21.

##### **2009**

Niemelä, J, Tyrväinen, L **2009**, 'Kaupunkisuunnittelussa tarvitaan tietoa luonnosta ja ihmisistä', **Helsingin Sanomat**, pp. A2.

Vaalgamaa, S **2009**, 'Jätevesien sisältämät ravinteet on saatava kiertoon: Vieraskynä', **Helsingin Sanomat**, vol 2009.

Weckström, J, Korkonen, S, Hanhinen, P **2009**, 'Uudenmaan siitepölyvuosi 2009', **Allergia & astma**, no. 6, pp. 24.

Weckström, J, Korkonen, S, Hanhinen, P **2009**, 'Uudenmaan allergeenisten siitepölyjen esiintyminen ilmassa vuonna 2008', **Allergia & astma**, no. 3-4, pp. 26.

##### **2010**

Vaalgamaa, S **2010**, 'Jätevesien puhdistusmenetelmiä on kehitettävä', **Helsingin Sanomat**, vol 2010.

Venn, S **2010**, 'Niittyverkostojen tärkeys luonnon monimuotoisuudelle ja erityisesti pölyttäjähönteisyhteisöille', **Espoon ympäristön puolesta**, no. 2010/2, pp. 6-11.

Venn, S **2010**, 'Pääkirjoitus', **Espoon ympäristön puolesta**, no. 2010/2, pp. 3.

#### **E2 Popular monograph**

##### **2005**

Lodenius, M, Luther, I **2005**, *I Helene Schjerfbeck's fotspår: Hanna Svanström-Lodenius 1879-1975*, [s. n.], [Helsingfors].

##### **2006**

Lodenius, M **2006**, *Ilmansuojelun korkeakouluopetus - kokonaisuus vai yksityiskohdat*, **Ilmansuojelu**, vol. 4/2006, **Ilmansuojeluyhdistys**.

##### **2008**

Niemelä, J, Yli-Pelkonen, V **2008**, *Asiantuntijalausunto Uudenmaan maakuntakaavan ja 1. vaihemaakuntakaavaluonnoksen vaikutuksista maakunnan ekologiseen verkostoon ja sen toimivuuteen*, **Uudenmaan liiton julkaisuja, no. E 98, Uudenmaan liitto, Helsinki**.

Stenius, M, Niemelä, J **2008**, *Turun yliopiston laadunvarmistusjärjestelmän auditointi*, **Korkeakoulujen arviointineuvoston julkaisuja, no. 11:2008, Korkeakoulujen arviointineuvosto, [Helsinki]**.



# INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE UNIVERSITY OF HELSINKI

## RC-SPECIFIC TUHAT COMPILATIONS OF OTHER SCIENTIFIC ACTIVITIES 2005-2010

ENIGMA/Korhola

### 1 Analysis of activities 2005-2010

- Associated person is one of Laura Forsström , Sami Tapio Hanhijärvi , Pekka Kauppi ,  
Atte Korhola , Sanna Korkonen , David Johannes Kotze ,  
Susanna Lehvävirta , Anne Liljendahl , Martin Lodenius , Katja Matveinen-  
Huju, Jari Niemelä , Marjut Talviki Nyman , Johanna Rainio , Aapo Rautiainen ,  
Tiina Ronkainen , Meri Ruppel , Jarmo Saarikivi ,  
Susanna Siitonen , Monika Ståhls , Päivi Tikka , Sanna Vaalgamaa ,  
Jan Weckström , Kaarina Weckström , Stephen Venn ,  
Tarmo Virtanen , Minna Välranta ,

Activity type	Count
Supervisor or co-supervisor of doctoral thesis	15
Editor of research journal	110
Peer review of manuscripts	71
Editor of series	2
Editor of special theme number	1
Assessment of candidates for academic posts	1
Membership or other role in review committee	6
Membership or other role in research network	5
Membership or other role in national/international committee, council, board	41
Membership or other role in public Finnish or international organization	27
Membership or other role of body in private company/organisation	5
Other tasks of an expert in private sector	1
Participation in interview for written media	100
Participation in radio programme	28
Participation in TV programme	19
Participation in interview for web based media	4



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ENIGMA/Korhola

## 2 Listing of activities 2005-2010

### Supervisor or co-supervisor of doctoral thesis

#### **David Johannes Kotze ,**

Supervision of doctoral thesis, David Johannes Kotze, 01.01.2005 → 31.12.2005, Spain

Supervision of doctoral thesis, David Johannes Kotze, 01.01.2008 → 31.12.2008, Finland

Supervisor: PhD, David Johannes Kotze, 26.08.2008 → ..., Finland

#### **Päivi Tikka ,**

Väitöskirjan ohjaus, Päivi Tikka, 2003 → 2008, Finland

#### **Jan Weckström ,**

Väitöskirjan ohjaaja, Jan Weckström, 2005 → ...

Väitöskirjan ohjaaja, Jan Weckström, 2008 → ...

Väitöskirjan ohjaaja, Jan Weckström, 2008 → ...

Väitöskirjan ohjaaja, Jan Weckström, 2010 → ...

#### **Stephen Venn ,**

Ecological network for the city of Lahti and the significance of ecological corridors for biodiversity, Stephen Venn, 2005 → 2006, Finland

Effects of meadow management strategies on butterfly (Lepidoptera) populations of urban meadows in Helsinki, Stephen Venn, 2006 → 2007, Finland

Effects of mowing on ground beetle assemblages of urban meadows, Stephen Venn, 2006 → 2007, Finland

Effects of meadow management strategies on populations of ground beetles (Coleoptera, Carabidae) on urban meadows in Helsinki, Stephen Venn, 2007 → 2010, Finland

The effects of urbanization and management history on carabid beetles (Coleoptera: Carabidae) of urban meadows, Stephen Venn, 2007 → 10.2009, Finland

#### **Minna Välranta ,**

Biomarkers – a new potential method to study highly humified peat components, Minna Välranta, 2010 → ..., Finland

Holocene environmental change in Sokli, northern Finland, Minna Välranta, 2010 → ..., Sweden

### Editor of research journal

#### **Atte Korhola ,**

Environmental Science & Technology, Atte Korhola, 01.01.2005 → 31.12.2005

Journal of Applied Ecology, Atte Korhola, 01.01.2005 → 31.12.2005

Journal of Paleolimnology, Atte Korhola, 01.01.2005 → 31.12.2005, Germany

Journal of Paleolimnology, Atte Korhola, 01.01.2005 → 31.12.2005, Germany

Journal of Vegetation Science, Atte Korhola, 01.01.2005 → 31.12.2005

The Holocene, Atte Korhola, 01.01.2005 → 31.12.2005, United Kingdom

Journal of Biogeography, Atte Korhola, 01.01.2006 → 31.12.2006

Journal of Paleolimnology, Atte Korhola, 01.01.2006 → 31.12.2006

Journal of Paleolimnology, Atte Korhola, 01.01.2006 → 31.12.2006

Limnology & Oceanography, Atte Korhola, 01.01.2006 → 31.12.2006

Quaternary Science Reviews, Atte Korhola, 01.01.2006 → 31.12.2006

Arctic, Antarctic and Alpine Research, Atte Korhola, 01.01.2007 → 31.12.2007, United States

Journal of Paleolimnology, Atte Korhola, 01.01.2007 → 31.12.2007, Germany



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### RC-SPECIFIC TUHAT COMPILATIONS OF OTHER SCIENTIFIC ACTIVITIES 2005-2010

#### ENIGMA/Korhola

Journal of Paleolimnology, Atte Korhola, 01.01.2007 → 31.12.2007, Germany

Limnology & Oceanography, Atte Korhola, 01.01.2007 → 31.12.2007, United States

The Holocene, Atte Korhola, 01.01.2007 → 31.12.2007, United Kingdom

Freshwater Biology, Atte Korhola, 01.01.2008 → 31.12.2008

Journal of Paleolimnology, Atte Korhola, 01.01.2008 → 31.12.2008

Journal of Paleolimnology, Atte Korhola, 01.01.2008 → 31.12.2008

Limnology & Oceanography, Atte Korhola, 01.01.2008 → 31.12.2008

#### **David Johannes Kotze ,**

Editor-in-Chief of the Journal of Negative Results, David Johannes Kotze, 01.12.2003 → ..., Finland

Annales Zoologici Fennici, David Johannes Kotze, 01.01.2005 → 31.12.2005

Basic and Applied Ecology, David Johannes Kotze, 01.01.2005 → 31.12.2005

Biological Conservation, David Johannes Kotze, 01.01.2005 → 31.12.2005

Conservation Biology, David Johannes Kotze, 01.01.2005 → 31.12.2005

Earthwatch Institute, David Johannes Kotze, 01.01.2005 → 31.12.2005

Ecography, David Johannes Kotze, 01.01.2005 → 31.12.2005

European Journal of Entomology, David Johannes Kotze, 01.01.2005 → 31.12.2005

Forest Ecology and Management, David Johannes Kotze, 01.01.2005 → 31.12.2005

Journal of Biogeography, David Johannes Kotze, 01.01.2005 → 31.12.2005

Journal of Insect Conservation, David Johannes Kotze, 01.01.2005 → 31.12.2005

Journal of Negative Results Ecology and Evolutionary Biology, David Johannes Kotze, 01.01.2005 → 31.12.2005

Mitteilungen Aus Dem Museum Für Naturkunde, Zool. Series, David Johannes Kotze, 01.01.2005 → 31.12.2005

Oikos, David Johannes Kotze, 01.01.2005 → 31.12.2005

Oxford University Press book proposal, David Johannes Kotze, 01.01.2005 → 31.12.2005

The Canadian Entomologist, David Johannes Kotze, 01.01.2005 → 31.12.2005

Vie et Milieu Life & Environment, David Johannes Kotze, 01.01.2005 → 31.12.2005

Acta Zoologica Academiae Scientiarum Hungaricae, David Johannes Kotze, 01.01.2008 → 31.12.2008

Agricultural and Forest Entomology, David Johannes Kotze, 01.01.2008 → 31.12.2008

Agriculture, David Johannes Kotze, 01.01.2008 → 31.12.2008

Annales Zoologici Fennici, David Johannes Kotze, 01.01.2008 → 31.12.2008, Finland

Annales Zoologici Fennici, David Johannes Kotze, 01.01.2008 → 31.12.2008, Finland

Associate editor of Annales Zoologici Fennici, David Johannes Kotze, 03.01.2008 → ..., Finland

Austral Ecology, David Johannes Kotze, 01.01.2008 → 31.12.2008

Biological Conservation, David Johannes Kotze, 01.01.2008 → 31.12.2008

Ecography, David Johannes Kotze, 01.01.2008 → 31.12.2008

Ecosystems & Environment, David Johannes Kotze, 01.01.2008 → 31.12.2008

European Journal of Entomology, David Johannes Kotze, 01.01.2008 → 31.12.2008

Forest Ecology and Management, David Johannes Kotze, 01.01.2008 → 31.12.2008

Journal of Negative Results (www.jnr-eeb.org), David Johannes Kotze, 01.01.2008 → 31.12.2008, Finland

Landscape Ecology, David Johannes Kotze, 01.01.2008 → 31.12.2008

New Zealand Journal of Zoology, David Johannes Kotze, 01.01.2008 → 31.12.2008

Oikos, David Johannes Kotze, 01.01.2008 → 31.12.2008





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### RC-SPECIFIC TUHAT COMPILATIONS OF OTHER SCIENTIFIC ACTIVITIES 2005-2010

#### ENIGMA/Korhola

Invited editor of a Special Issue in the journal Kookeys, David Johannes Kotze, 24.09.2009 → 28.02.2010, Bulgaria

Invited editor of a Special Issue in the journal Biodiversity and Conservation, David Johannes Kotze, 01.04.2010 → 31.12.2010

Subject Editor for Oikos, David Johannes Kotze, 14.12.2010 → ..., Sweden

#### **Susanna Lehvävirta ,**

Landscape Ecology, Susanna Lehvävirta, 01.01.2007 → 31.12.2007

Urban Ecosystems, Susanna Lehvävirta, 01.01.2007 → 31.12.2007

Urban Forestry and Urban Greening, Susanna Lehvävirta, 01.01.2007 → 31.12.2007

#### **Martin Lodenius ,**

Boreal Environment Research, Martin Lodenius, 01.01.2005 → 31.12.2005, Finland

Chemosphere, Martin Lodenius, 01.01.2005 → 31.12.2005

Environmental Science & Technology, Martin Lodenius, 01.01.2005 → 31.12.2005

Science of the Total Environment, Martin Lodenius, 01.01.2005 → 31.12.2005

Acta Universitatis Carolinae, Environmentalica, Martin Lodenius, 01.01.2006 → 31.12.2006, Czech Republic

Archives of Environmental Contamination and Toxicology, Martin Lodenius, 01.01.2006 → 31.12.2006

Boreal Environment Research, Martin Lodenius, 01.01.2006 → 31.12.2006, Finland

Chemosphere, Martin Lodenius, 01.01.2006 → 31.12.2006

Ecotoxicology and Environmental Safety, Martin Lodenius, 01.01.2006 → 31.12.2006

Environmental Pollution, Martin Lodenius, 01.01.2006 → 31.12.2006

Environmental Science & Technology, Martin Lodenius, 01.01.2006 → 31.12.2006

Food Additives and Contaminants, Martin Lodenius, 01.01.2006 → 31.12.2006

ARCHIVES OF ENVIRONMENTAL CONTAMINATION AND TOXICOLOGY, Martin Lodenius, 01.01.2007 → 31.12.2007

Acta Universitatis Carolinae, Environmentalica, Martin Lodenius, 01.01.2007 → 31.12.2007, Czech Republic

Ambio, Martin Lodenius, 01.01.2007 → 31.12.2007

Boreal Environment Research, Martin Lodenius, 01.01.2007 → 31.12.2007, Finland

Ecotoxicology and Environmental Safety, Martin Lodenius, 01.01.2007 → 31.12.2007

Environmental and Experimental Botany, Martin Lodenius, 01.01.2007 → 31.12.2007

Food Additives and Contaminants, Martin Lodenius, 01.01.2007 → 31.12.2007

Forestry Studies (Estonia), Martin Lodenius, 01.01.2007 → 31.12.2007

Water, Air, & Soil Pollution, Martin Lodenius, 01.01.2007 → 31.12.2007

Acta Universitatis Carolinae, Environmentalica, Martin Lodenius, 01.01.2008 → 31.12.2008, Czech Republic

Boreal Environment Research, Martin Lodenius, 01.01.2008 → 31.12.2008, Finland

#### **Jari Niemelä ,**

Member of the editorial board of Baltic Journal of Coleopterology, Jari Niemelä, 01.01.2001 → 31.12.2005, Latvia

Agricultural and Forest Entomology, Jari Niemelä, 01.01.2005 → 31.12.2005, United Kingdom

Australian Journal of Ecology, Jari Niemelä, 01.01.2005 → 31.12.2005, Australia

Biodiversity and Conservation, Jari Niemelä, 01.01.2005 → 31.12.2005, Netherlands

Biodiversity and Conservation tiedelehden toimituskunnan jäsen, Jari Niemelä, 01.01.2005 → 31.12.2010

Forest Ecology and Management, Jari Niemelä, 01.01.2005 → 31.12.2005, Netherlands

Agricultural and Forest Entomology, Jari Niemelä, 10.07.2006 → 31.12.2006, United Kingdom

Biodiversity and Conservation, Jari Niemelä, 01.01.2006 → 31.12.2006, Netherlands

Biological Conservation, Jari Niemelä, 02.01.2006 → 01.09.2006, United Kingdom



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### RC-SPECIFIC TUHAT COMPILATIONS OF OTHER SCIENTIFIC ACTIVITIES 2005-2010

#### ENIGMA/Korhola

Entomologica Fennica, Jari Niemelä, 04.01.2006 → 31.12.2006, United Kingdom  
Forest Ecology and Management, Jari Niemelä, 01.01.2006 → 31.12.2006, Netherlands  
Journal of Applied Ecology, Jari Niemelä, 26.07.2006 → 31.12.2006, United Kingdom  
Biological Conservation, Jari Niemelä, 01.02.2007 → 28.03.2007, United Kingdom  
Forest Ecology and Management, Jari Niemelä, 01.01.2007 → 31.12.2007, Netherlands  
Biodiversity and Conservation, Jari Niemelä, 01.01.2008 → 31.12.2008, Netherlands  
Biological Conservation, Jari Niemelä, 13.04.2008 → 31.12.2008, United Kingdom  
Forest Ecology and Management, Jari Niemelä, 01.01.2008 → 31.12.2008, Netherlands  
Insect Conservation and Diversity, Jari Niemelä, 07.06.2008 → 03.10.2008, United Kingdom

#### **Stephen Venn ,**

Baltic Journal of Coleopterology, Stephen Venn, 01.01.2007 → 31.12.2007, Latvia  
Annales de la Société entomologique de France, Stephen Venn, 01.07.2008 → 31.07.2008, France  
Baltic Journal of Coleopterology, Stephen Venn, 01.04.2008 → 30.04.2008, Latvia  
Baltic Journal of Coleopterology, Stephen Venn, 01.04.2008 → 30.04.2008, Latvia  
Journal of Insect Conservation, Stephen Venn, 01.07.2008 → 31.07.2008  
Proceedings of 13th European Carabidologists Meeting, Stephen Venn, 01.05.2008 → 31.05.2008

#### **Tarmo Virtanen ,**

Entomologica Fennica, Tarmo Virtanen, 25.04.2005 → 31.12.2005, Finland  
Remote Sensing of Environment, Tarmo Virtanen, 30.10.2005 → 31.12.2005, United States  
Ecological Engineering, Tarmo Virtanen, 09.02.2006 → 31.12.2006  
Remote Sensing of Environment, Tarmo Virtanen, 04.09.2007 → 31.12.2007, United States

#### **Peer review of manuscripts**

##### **David Johannes Kotze ,**

Review manuscript for Agricultural and Forest Entomology, David Johannes Kotze, 08.02.2010  
Review manuscript for Agricultural and Forest Entomology, David Johannes Kotze, 13.06.2010  
Review manuscript for Agricultural and Forest Entomology, David Johannes Kotze, 14.09.2010  
Review manuscript for Agriculture, Ecosystems and Environment, David Johannes Kotze, 03.03.2010  
Review manuscript for Biodiversity and Conservation, David Johannes Kotze, 22.03.2010  
Review manuscript for Biodiversity and Conservation, David Johannes Kotze, 08.06.2010  
Review manuscript for Biodiversity and Conservation, David Johannes Kotze, 27.11.2010  
Review manuscript for Biological Invasions, David Johannes Kotze, 18.05.2010  
Review manuscript for Ecography, David Johannes Kotze, 16.03.2010  
Review manuscript for Ecological Research, David Johannes Kotze, 01.01.2010  
Review manuscript for Forest Ecology and Management, David Johannes Kotze, 13.06.2010  
Review manuscript for Insect Conservation and Diversity, David Johannes Kotze, 13.05.2010  
Review manuscript for Landscape Ecology, David Johannes Kotze, 16.01.2010  
Review manuscript for Polish Journal of Environmental Studies, David Johannes Kotze, 12.09.2010  
Review manuscript for Urban Forestry & Urban Greening, David Johannes Kotze, 09.12.2010

##### **Susanna Lehvävirta ,**

biodiversity and conservation -lehteen, Susanna Lehvävirta, 2010 → ...



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UNIVERSITY OF HELSINKI

RC-SPECIFIC TUHAT COMPILATIONS OF OTHER SCIENTIFIC ACTIVITIES 2005-2010

ENIGMA/Korhola

**Anne Liljendahl ,**

Reviewer of Journal of Plankton Research, Anne Liljendahl, 2010

**Jari Niemelä ,**

Agricultural and Forest Entomology julkaisusarjan arvioija (1 arviointi), Jari Niemelä, 01.01.2005 → 31.12.2005  
Australian Journal of Ecology -julkaisusarjan vertaisarvioitsija (1 arviointi), Jari Niemelä, 01.01.2005 → 31.12.2005  
Biodiversity and Conservation -julkaisusarjan vertaisarvioija (3 arviointia), Jari Niemelä, 01.01.2005 → 31.12.2005  
Forest Ecology and Management -julkaisusarjan vertaisarvioija (2 arviointia), Jari Niemelä, 01.01.2005 → 31.12.2005  
Agricultural and Forest Entomology julkaisusarjan arvioitsija (1 arviointi), Jari Niemelä, 01.01.2006 → 31.12.2006  
Biological Conservation julkaisusarjan arvioitsija (2 arviointia), Jari Niemelä, 01.01.2006 → 31.12.2006  
Entomologica Fennica julkaisusarjan arvioitsija (1 arviointi), Jari Niemelä, 01.01.2006 → 31.12.2006  
Journal of Applied Ecology julkaisusarjan arvioitsija (1 arviointi), Jari Niemelä, 01.01.2006 → 31.12.2006  
Journal of Insect Conservation julkaisusarjan arvioitsija (1 arviointi), Jari Niemelä, 01.01.2006 → 31.12.2006  
Referee: Journal of Insect Conservation, Jari Niemelä, 03.01.2006 → 31.12.2006, United Kingdom  
Biological Conservation julkaisusarjan arvioitsija (2 arviointia), Jari Niemelä, 01.01.2007 → 31.12.2007  
Landscape and Urban Planning julkaisusarjan arvioitsija (1 arviointi), Jari Niemelä, 01.01.2007 → 31.12.2007  
Referee: Journal of Insect Conservation (1 review), Jari Niemelä, 01.01.2007 → 31.12.2007  
Referee: Landscape and Urban Planning, Jari Niemelä, 02.12.2007 → 31.12.2007, United Kingdom  
Referee: Journal of Insect Conservation, Jari Niemelä, 27.02.2007 → 31.12.2007, United Kingdom  
Referee: Urban Ecosystems (1 review), Jari Niemelä, 01.01.2007 → 31.12.2007  
Biological Conservation julkaisusarjan arvioitsija (1 arviointi), Jari Niemelä, 01.01.2008 → 31.12.2008  
Insect Conservation and Diversity-julkaisusarjan arvioitsija (2 arviointia), Jari Niemelä, 01.01.2008 → 31.12.2008  
Landscape and Urban Planning julkaisusarjan arvioitsija (2 arviointia), Jari Niemelä, 01.01.2008 → 31.12.2008  
Referee: Landscape and Urban Planning, Jari Niemelä, 09.09.2008 → 26.10.2008, United Kingdom  
Agricultural and Forest Entomology julkaisusarjan arvioitsija (1 arviointi), Jari Niemelä, 19.12.2009

**Päivi Tikka ,**

Environmental Science & Policy, Päivi Tikka, 01.01.2006 → 31.12.2006  
Restoration Ecology, Päivi Tikka, 01.01.2007 → 31.12.2007  
Science of the Total Environment, Päivi Tikka, 01.01.2007 → 31.12.2007  
Forest Policy and Economics, Päivi Tikka, 2008

**Sanna Vaalgamaa ,**

Estuarine, Coastal and Shelf Science, Sanna Vaalgamaa, 15.06.2005  
Journal of Environmental Management, Sanna Vaalgamaa, 15.05.2008  
Continental Shelf Research, Sanna Vaalgamaa, 15.09.2010

**Jan Weckström ,**

Arctic & Alpine Research, Jan Weckström, 1998 → ...  
Journal of Paleolimnology, Jan Weckström, 1998 → ...  
Journal of Phycology, Jan Weckström, 2000 → ...  
Canadian Journal of Fisheries and Aquatic Sciences, Jan Weckström, 2001 → ...  
Hydrobiologia, Jan Weckström, 2003 → ...  
Acta Botanica Croatica, Jan Weckström, 2004 → ...  
Global and Planetary Change, Jan Weckström, 2004 → ...



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### RC-SPECIFIC TUHAT COMPILATIONS OF OTHER SCIENTIFIC ACTIVITIES 2005-2010

#### ENIGMA/Korhola

Journal of Biogeography, Jan Weckström, 2004 → ...

Archiv für Hydrobiologie, Jan Weckström, 2006 → ...

Arctic, Jan Weckström, 2006 → ...

Global Change Biology, Jan Weckström, 2006 → ...

Palaeogeography, Palaeoclimatology, Palaeoecology, Jan Weckström, 2006 → ...

Quaternary Science Reviews, Jan Weckström, 2006 → ...

Terra, Jan Weckström, 2007 → ...

Nature Geoscience, Jan Weckström, 2009 → ...

The Diatoms: Applications to the environmental and earth sciences (eds: J.P. Smol & E.F. Stoermer), Cambridge University Press, (book chapter), Jan Weckström, 2009 → ...

Chemistry and Ecology, Jan Weckström, 2010 → ...

Ecohydrology, Jan Weckström, 2010 → ...

Geological Quarterly, Jan Weckström, 2010 → ...

#### **Minna Väiliranta ,**

Suo, Mires and Peat, Minna Väiliranta, 2005, Finland

Suo- Mires and Peat, Minna Väiliranta, 2006, Finland

Suo-Mires and Peat, Minna Väiliranta, 2007

Estonian Journal of Ecology, Minna Väiliranta, 2008

Geological Quarterly, Minna Väiliranta, 2009

Acta Geologica Hungarica, Minna Väiliranta, 2010

Paleogeography Palaeoclimatology Palaeoecology, Minna Väiliranta, 2010

#### **Editor of series**

##### **Jari Niemelä ,**

Landscape Ecology julkaisusarjan toimituskunnan jäsen, Jari Niemelä, 01.01.2005 → 31.12.2010

Member of the editorial board of Forest Ecology and Management, Jari Niemelä, 01.01.2005 → 31.12.2009

#### **Editor of special theme number**

##### **Susanna Lehvävirta ,**

Biodiversity and Conservation, Susanna Lehvävirta, 2009 → 2011

#### **Assessment of candidates for academic posts**

##### **Jari Niemelä ,**

Dosentihakemuksen arviointi, Jari Niemelä, 01.07.2006 → 30.07.2006, Sweden

#### **Membership or other role in review committee**

##### **David Johannes Kotze ,**

Review Project Proposal - South Africa's National Research Foundation (NRF), David Johannes Kotze, 29.06.2010, South Africa

Review Project Proposal - South Africa's National Research Foundation (NRF), David Johannes Kotze, 22.12.2010, South Africa

##### **Jari Niemelä ,**

FORMAS tutkimusrahoitusorganisaation yhden asiantuntijapaneelin jäsen, Jari Niemelä, 01.01.2006 → 31.12.2008, Sweden

FORMAS tutkimusrahoitusorganisaation asiantuntijapaneelin puheenjohtaja, Jari Niemelä, 01.01.2009 → 31.12.2010, Sweden

##### **Päivi Tikka ,**

Tutkimussuunnitelmien arviointi, Päivi Tikka, 2008



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#### ENIGMA/Korhola

##### **Stephen Venn ,**

FP7 ENV 2011, Stephen Venn, 08.12.2010 → 21.01.2011

#### **Membership or other role in research network**

##### **Anne Liljendahl ,**

Member of the board, Anne Liljendahl, 2009, Finland

##### **Jari Niemelä ,**

Jäsenyys European Platform for Biodiversity Research Strategy verkostossa, Jari Niemelä, 01.01.2001 → 31.12.2010

Helsingin yliopiston ympäristötutkimus- ja opetusyksikön ohjausryhmän puheenjohtaja, Jari Niemelä, 01.01.2005 → 31.12.2010, Finland

Member of the board of European Platform for Biodiversity Research Strategy-tutkimusverkoston hallituksen jäsen, Jari Niemelä, 01.01.2005 → 31.12.2008

##### **Sanna Vaalgamaa ,**

Jäsen, Sanna Vaalgamaa, 2002 → ..., Finland

#### **Membership or other role in national/international committee, council, board**

##### **Laura Forsström ,**

Board of Finnish Phytoplankton Society, Laura Forsström, 2007 → ..., Finland

Member of CBMP-FEMG, Laura Forsström, 2010 → ...

##### **Atte Korhola ,**

Ad hoc Committee of International Paleolimnology Association (IPA), Atte Korhola, 01.01.2005 → 31.12.2005

Arctic Monitoring and Assessment Programme (AMAP)/Arctic Climate Impact Assessment (ACIA), Atte Korhola, 01.01.2005 → 31.12.2005

Finnish National Committee of Quaternary Research (INQUA), Atte Korhola, 01.01.2005 → 31.12.2005, Finland

International Geosphere-Biosphere Programme (IGBP), Past Global Changes (PAGES), Pole to Pole transect (PEPIII): High latitude/high altitude Europe, Atte Korhola, 01.01.2005 → 31.12.2005

Suomen Akatemia, Atte Korhola, 01.01.2005 → 31.12.2005, Finland

Arctic Monitoring and Assessment Programme (AMAP); Member of the Expert Group of the AMAP Assessment report on Acidifying pollutants, Arctic Haze and Acidification in the Arctic, Atte Korhola, 01.01.2006 → 31.12.2006

Finnish National Committee of Quaternary Research (INQUA), Atte Korhola, 01.01.2006 → 31.12.2006

International Paleolimnology Association (IPA), Atte Korhola, 01.01.2006 → 31.12.2006

Suomen Akatemia, BIREME Itämeri-ohjelman lopputuotetta suunnitteleva komitea, Atte Korhola, 01.01.2006 → 31.12.2006, Finland

UArctic thematic network on global change in the Arctic., Atte Korhola, 01.01.2006 → 31.12.2006

Arctic Center, University of Lapland, Atte Korhola, 01.01.2007 → 31.12.2007, Finland

Arctic Monitoring and Assessment Programme (AMAP); Member of the expert Group of the AMAP Assessment report on Acidifying pollutants, Arctic Haze and Acidification in the Arctic, Atte Korhola, 01.01.2007 → 31.12.2007

Euroopan Komissio, Arviointipaneeli, Atte Korhola, 01.01.2007 → 31.12.2007, Belgium

Euroopan Komissio, Arviointipaneeli, Atte Korhola, 01.01.2007 → 31.12.2007, Belgium

Finnish National Committee of Quaternary Research (INQUA), Atte Korhola, 01.01.2007 → 31.12.2007, Finland

UArctic thematic network on global change in the Arctic, Atte Korhola, 01.01.2007 → 31.12.2007

Arctic Center, University of Lapland, Atte Korhola, 01.01.2008 → 31.12.2008, Finland

Euroopan Komissio, Arviointipaneeli, Atte Korhola, 01.01.2008 → 31.12.2008

European Academies Science Advisory Council (EASAC), Environment Committee, Atte Korhola, 01.01.2008 → 31.12.2008

Finnish National Committee of Quaternary Research (INQUA), Atte Korhola, 01.01.2008 → 31.12.2008

IGBP PAGES sub-programme PHAROS (Past Human-Climate-Ecological Interactions), Atte Korhola, 01.01.2008 → 31.12.2008, United Kingdom



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#### ENIGMA/Korhola

IPCC:n Kansallinen Työryhmä, Atte Korhola, 01.01.2008 → 31.12.2008, Finland

Tellervo and Juuso Waldenin Säätiö, Atte Korhola, 01.01.2008 → 31.12.2008, Finland

UArctic thematic network on global change in the Arctic, Atte Korhola, 01.01.2008 → 31.12.2008, Finland

#### **Martin Lodenius ,**

Editorial board - Boreal Environment Research, Martin Lodenius, 1999 → ...

Editor - Environmentalica Fennica, Martin Lodenius, 2000 → ..., Finland

Editorial board - Acta Universitatis Carolinae - Environmentalica, Martin Lodenius, 2000 → ..., Czech Republic

Consultative Board, Escola Superior Agrária de Coimbra, Martin Lodenius, 2005 → ..., Portugal

Nordenskiöldsamfundet, Martin Lodenius, 01.01.2008 → 31.12.2008, Finland

#### **Jari Niemelä ,**

Society for Conservation Biology, European Section, member of Board, Jari Niemelä, 01.01.2002 → 31.12.2005

Geeniteknikan lautakunnan varapuheenjohtaja, Jari Niemelä, 01.01.2005 → 31.12.2010

Ympäristötutkimuksen koordinaatioryhmä, Jari Niemelä, 01.01.2006 → 31.12.2008, Finland

Member of WWF International Board, Jari Niemelä, 01.01.2008 → 31.12.2009, Switzerland

#### **Sanna Vaalgamaa ,**

Biotalouspäivä, Sanna Vaalgamaa, 26.08.2010, Finland

Paikallinen biotalous - round table, Sanna Vaalgamaa, 22.06.2010, Finland

#### **Jan Weckström ,**

Reviewer for the Estonian Science Foundation (ETF), Jan Weckström, 2006 → ...

Reviewer for the Swiss National Science Foundation (SNSF), Jan Weckström, 2006 → ...

Member of the pool of experts of the University of Helsinki, Jan Weckström, 2007 → ...

#### **Minna Väiliranta ,**

Member of pool of experts, University of Helsinki, Minna Väiliranta, 2009 → ..., Finland

### Membership or other role in public Finnish or international organization

#### **Atte Korhola ,**

Euroopan komissio, Atte Korhola, 01.01.2005 → 31.12.2005, Belgium

Euroopan Komissio, DG10, Tiede- ja teknologiahankkeiden evaluaattori, Atte Korhola, 01.01.2006 → 31.12.2006, Belgium

Elinkeinoelämän valtuuskunta EVA, Ilmastoraportin loppuanalysistä vastaava, Atte Korhola, 01.01.2007 → 31.12.2007, Finland

Suomen delegaation jäsen YK:n ilmastokokouksessa Baliin, Atte Korhola, 11.12.2007 → 18.12.2007, Finland

Suomen itsenäisyyden juhlarahasto SITRA, Energia-ohjelman suunnittelu, Atte Korhola, 15.08.2007 → 31.12.2007

Teknologioiden ja innovaatioiden kehittämiskeskus TEKES, ilmasto- ja energiaohjelman suunnittelu, Atte Korhola, 26.09.2007 → 31.12.2007, Finland

Uusien kansanedustajien koulutus ilmastomuutoskysymyksissä, Atte Korhola, 12.06.2007 → 31.12.2007, Finland

Elinkeinoelämän valtuuskunta EVA, Atte Korhola, 01.01.2008 → 31.12.2008, Finland

Suomen Rakennusinsinöörien Liitto (RIL), Ilmastotyöryhmä, Atte Korhola, 01.04.2008 → 12.12.2008, Finland

Sverige och Finland i EU och världen i framtiden Juhlavuosi, Ulkoministeriö, Atte Korhola, 01.01.2008 → 31.12.2008

#### **Susanna Lehvävirta ,**

Kaupunkiekologisen tutkimuksen työryhmä, Susanna Lehvävirta, 2005 → 2007, Finland

Kaupunkiekologisen tutkimuksen työryhmä (Helsingin yliopiston ja Helsingin kaupungin välinen tutkimusyhteistyöelin), Susanna Lehvävirta, 01.01.2007 → 31.12.2007, Finland

St. Petersburg State University, Tempus-ohjelma (osallistuminen Biodiversiteetti-maisteriohjelman opetussisältöjen suunnitteluun; kaupunkiekologian opetuskokonaisuudet), Susanna Lehvävirta, 01.01.2007 → 31.12.2007, Russia



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#### ENIGMA/Korhola

The Finnish EcoCity for China -hanke (VTT:n luotsaama hanke, jossa viedään tietotaitoa Kiinaan), Susanna Lehvävirta, 01.01.2007 → 31.12.2007, Finland

Urban nature expert in the Finnish EcoCity Project run by VTT., Susanna Lehvävirta, 2007 → ..., China

Member of the Research advisory board of the Finnish Natural History Museum, Susanna Lehvävirta, 2009 → 2010, Finland

#### **Martin Lodenius ,**

Naturresursrådet, Martin Lodenius, 01.01.2005 → 31.12.2005, Finland

Naturresursrådet, Martin Lodenius, 01.01.2006 → 31.12.2006, Finland

Naturresursrådet, Martin Lodenius, 01.01.2007 → 31.12.2007

#### **Jari Niemelä ,**

Member of the expert evaluation panel of Maj and Tor Nessling foundation, Jari Niemelä, 01.01.2001 → 31.12.2006, Finland

Member of the scientific advisory board of Forest and park services, Finland, Jari Niemelä, 31.01.2004 → 31.12.2010

Member of the advisory board of the Finnish Environment Institute, Jari Niemelä, 01.01.2005 → 31.12.2008, Finland

Member of the board of Maj and Tor Nessling foundation, Jari Niemelä, 01.01.2007 → 31.12.2010

Member of the scientific advisory board of MTT research, Jari Niemelä, 01.09.2007 → 31.12.2010, Finland

#### **Päivi Tikka ,**

Helsingin yliopiston Bio- ja ympäristötieteiden laitoksen Ympäristötieteiden pääainetoimikunta, Päivi Tikka, 01.01.2007 → 31.12.2009

#### **Sanna Vaalgamaa ,**

Apujäsen, sensori, Sanna Vaalgamaa, 1999 → ..., Finland

#### **Stephen Venn ,**

Helsingin ympäristökeskuksen koordinoima Helsingin Luonnon monimuotoisuuden ohjelman ohjausryhmän varajäsen, Stephen Venn, 01.01.2007 → 31.12.2007, Finland

### Membership or other role of body in private company/organisation

#### **Jari Niemelä ,**

Chairman of the Executive Board of WWF Finland, Jari Niemelä, 01.01.2005 → 31.12.2010, Finland

Gardenia Oy:n hallituksen jäsen, Jari Niemelä, 01.01.2007 → 31.12.2010, Finland

#### **Stephen Venn ,**

Ekumeenisen keskuksen ystävät ry., Stephen Venn, 01.01.2007 → 31.12.2007, Finland

Espoon ympäristöyhdistys ry, Stephen Venn, 01.01.2007 → 31.12.2007, Finland

Espoon ympäristöyhdistys ry, Stephen Venn, 01.01.2008 → 31.12.2008, Latvia

### Other tasks of an expert in private sector

#### **Jan Weckström ,**

Consultant, Jan Weckström, 2010 → 2011

### Participation in interview for written media

#### **Atte Korhola ,**

Helsingin Sanomat, Atte Korhola, 17.06.2000 → 31.12.2011, Finland

Yliopisto (Acta Universitatis Helsingiensis), Atte Korhola, 01.12.2000 → 31.12.2011, Finland

YLE1 Tiedeohjelmat, Atte Korhola, 12.01.2001 → 31.12.2011, United Kingdom

YLE2 Tutkittu juttu, Atte Korhola, 01.01.2001 → 31.12.2011, United Kingdom

Etelä-Suomen Sanomat, Atte Korhola, 02.06.2002 → 31.12.2011, Canada

Helsingin Sanomat, Atte Korhola, 01.01.2002 → 31.12.2011, Canada

Pohjoismaita koskeva yleisöluento/Helsingin yliopisto, Atte Korhola, 18.04.2002 → 31.12.2011, Canada



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ENIGMA/Korhola

Suomen Kuvalehti, Atte Korhola, 25.10.2002 → 31.12.2011, Canada  
Yliopisto-lehti, Atte Korhola, 01.05.2002 → 31.12.2011, Canada  
FORUM för ekonomi och teknik (lehti, Atte Korhola, 01.01.2003 → 31.12.2011, Finland  
Viikki Päivät, Atte Korhola, 02.09.2003 → 31.12.2011, Finland  
lehti: Itä-Savo, Atte Korhola, 09.08.2004 → 31.12.2011, Finland  
Etelä-Suomen Sanomat, Atte Korhola, 15.04.2005 → 31.12.2011, Belgium  
Etelä-Suomen Sanomat, Atte Korhola, 15.04.2005 → 31.12.2011, Belgium  
Helsingin Sanomat, Atte Korhola, 02.11.2005 → 31.12.2011, Belgium  
Hämeen Sanomat, Atte Korhola, 15.04.2005 → 31.12.2011, Belgium  
Suomen Kuvalehti, Atte Korhola, 01.01.2005 → 31.12.2011, Belgium  
YLE 1. Nuorisouutiset..., Atte Korhola, 08.01.2005 → 31.12.2011, Belgium  
YLE1 Pääuutiset, Atte Korhola, 01.03.2005 → 31.12.2011, Belgium  
YLE1 Teema, Atte Korhola, 01.03.2005 → 31.12.2011, Belgium  
Seura, Atte Korhola, 22.12.2006 → 31.12.2011, Belgium  
YLE-1 Uutiset 20:30, Atte Korhola, 13.09.2006 → 31.12.2011, Belgium  
Obs (Svenska Television YLE1), Atte Korhola, 19.01.2007 → 31.12.2011, Finland  
A-plus (Television YLE1), Atte Korhola, 10.01.2007 → 31.12.2011, Finland  
Aamulehti, Atte Korhola, 14.02.2007 → 31.12.2011, Finland  
Aamulehti, Atte Korhola, 14.02.2007 → 31.12.2011, Finland  
Aamuposti magazine, Atte Korhola, 27.01.2007 → 31.12.2011, Finland  
Anna Magazine, Atte Korhola, 25.01.2007 → 31.12.2011, Finland  
Energia Suomessa (Energy in Finland), koululaislehti, Atte Korhola, 12.05.2007 → 31.12.2011, Finland  
Eri mediat (yli 40 mediaosumaa), Atte Korhola, 01.01.2007 → 31.12.2011, Finland  
Etelä-Suomen Sanomat, Atte Korhola, 28.01.2007 → 31.12.2011, Finland  
Forte-Fortum's Magazine, Atte Korhola, 01.02.2007 → 31.12.2011, Finland  
Helen-B, Helsingin Energian asiakaslehti, Atte Korhola, 01.03.2007 → 31.12.2011, Finland  
Helsingin Sanomat, Atte Korhola, 02.12.2007 → 31.12.2011, Finland  
Helsingin sanomat, Atte Korhola, 02.02.2007 → 31.12.2011, Finland  
Huvudstadsbladet, Atte Korhola, 11.02.2007 → 31.12.2011, Finland  
Ilta-Sanomat, Atte Korhola, 14.02.2007 → 31.12.2011, Finland  
Iltalehti Ilona, Atte Korhola, 08.02.2007 → 31.12.2011, Finland  
Kauppalehti (Economic magazine), Atte Korhola, 12.05.2007 → 31.12.2011, Finland  
Kauppalehti Optio Business Magazine Option, Atte Korhola, 15.02.2007 → 31.12.2011, Finland  
Kauphinking Magazine, Atte Korhola, 01.01.2007 → 31.12.2011, Finland  
Kemia, Atte Korhola, 01.02.2007 → 31.12.2011, Finland  
Lämpöpumppu-Uutiset, Atte Korhola, 01.03.2007 → 31.12.2011, Finland  
Nelonen (Channel-4) main television news, Atte Korhola, 02.02.2007 → 31.12.2011, Finland  
STT (Finnish national news agency), Atte Korhola, 01.02.2007 → 31.12.2011, Finland  
Suomi-Foorumi, Lahti, Atte Korhola, 06.11.2007 → 31.12.2011, Finland  
Talous-Sanomat (Business News), Atte Korhola, 11.01.2007 → 31.12.2011, Finland  
Taloussanomat, Atte Korhola, 03.08.2007 → 31.12.2011, Finland





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#### ENIGMA/Korhola

Tammenlastuja, Atte Korhola, 01.04.2007 → 31.12.2011, Finland  
TeliaSonera Suurasiakastiedote 2007, Atte Korhola, 01.01.2007 → 31.12.2011, Finland  
Vihreä lanka (Green party magazine), Atte Korhola, 09.02.2007 → 31.12.2011, Finland  
Voimatoilla - Energy companies magazine, Atte Korhola, 01.02.2007 → 31.12.2011, Finland  
YLE-1 Pressiklubi (media-critical television programme), Atte Korhola, 16.02.2007 → 31.12.2011, Finland  
YLE-1 pääuutiset (YLE main television news), Atte Korhola, 02.02.2007 → 31.12.2011, Finland  
YLE-2 Climate change evening, Atte Korhola, 17.04.2007 → 31.12.2011, Finland  
ABB Asiakas 2/2008., Atte Korhola, 01.02.2008 → 31.12.2011, Finland  
Biotieteellinen tiedekunta, Vuosikertomus (2008)., Atte Korhola, 03.03.2008 → 31.12.2011, Finland  
Helsingin Sanomat, Atte Korhola, 17.06.2008 → 31.12.2011, Finland  
Hufvudstadsbladet HBL, Atte Korhola, 24.01.2008 → 31.12.2011, Finland  
Kiila 25.10.2008., Atte Korhola, 25.10.2008 → 31.12.2011, Finland  
Kuntalehti, Atte Korhola, 29.12.2008 → 31.12.2011, Finland  
MOMENT Hannes Snellman Moment, Atte Korhola, 01.01.2008 → 31.12.2011, Finland  
Oulun Energia 27.10.2008., Atte Korhola, 27.10.2008 → 31.12.2011, Finland  
Toyota Plus, Atte Korhola, 01.01.2008 → 31.12.2011, Finland  
Västra Nyland, Atte Korhola, 04.08.2008 → 31.12.2011, Finland  
YLE Television K-Rappu., Atte Korhola, 27.03.2008 → 31.12.2011, Finland

#### **Susanna Lehvävirta ,**

Helsingin, Vantaan ja Espoon viherorganisaatioiden, kaavoittajien ja luonnonsuojeluyhdistysten seminaari, Susanna Lehvävirta, 28.08.2001 → 31.12.2011, United Kingdom  
Helsingin sanomat, Susanna Lehvävirta, 15.05.2005 → 31.12.2011, Finland  
Haastattelu Locus-lehteen aiheesta ilmastonmuutoksen vaikutus kasvillisuuteen ja kaupunkiluontoon, Susanna Lehvävirta, 04.10.2007  
Televisiohaastattelu/Ylen aikainen, Susanna Lehvävirta, 01.01.2007 → 31.12.2011, Russia  
Historian havinaa. Haastattelu, Susanna Lehvävirta, 14.07.2010  
Minun Troppini, Apteekkiketjun asiakaslehti, kansikuva ja haastattelu, Susanna Lehvävirta, 03.05.2010

#### **Anne Liljendahl ,**

Haastattelu Ylen läntinen -kanavalla, Anne Liljendahl, 27.07.2001 → 31.12.2011, Canada  
Hiidenveden suojeluyhdistys ry:n vuosikokous, Anne Liljendahl, 29.06.2001 → 31.12.2011, Canada  
Turun Sanomat, Anne Liljendahl, 23.08.2001 → 31.12.2011, Canada

#### **Martin Lodenius ,**

Societas pro Fauna et Flora Fennica, Martin Lodenius, 03.02.2005 → 31.12.2011, Finland

#### **Jari Niemelä ,**

Ylen aikainen, Jari Niemelä, 21.10.2008, Sweden  
Haastattelu Helsingin Sanomissa, Jari Niemelä, 20.07.2010, Finland

#### **Päivi Tikka ,**

Lehtihaastattelu, Päivi Tikka, 2009

#### **Jan Weckström ,**

Universitas Helsinkiensis, Jan Weckström, 2005 → ..., Finland  
Universitas Helsinkiensis, Jan Weckström, 2005 → ..., Finland  
Yliopisto-lehti, Jan Weckström, 2005 → ..., Finland  
Yliopisto-lehti, Jan Weckström, 2005 → ..., Finland



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#### ENIGMA/Korhola

Lapin Kansa, Jan Weckström, 2007 → ...

Pohjolan sanomat, Jan Weckström, 2007 → ...

Metro, Jan Weckström, 2009 → ...

#### **Kaarina Weckström ,**

Kymen sanomat, Kaarina Weckström, 27.06.2003 → 31.12.2011, Finland

YLEQ, Kaarina Weckström, 19.08.2003 → 31.12.2011, Finland

Etelä-Suomen sanomat, Kaarina Weckström, 03.09.2005 → 31.12.2011, Spain

Kymen sanomat, Kaarina Weckström, 19.08.2005 → 31.12.2011, Spain

Suomen tietotoimisto, Kaarina Weckström, 03.08.2005 → 31.12.2011, Spain

Suomen vesiensuojeluyhdistysten liiton tiedotuslehti Aquarius, Kaarina Weckström, 01.12.2005 → 31.12.2011, Spain

Ylen aikainen, Kaarina Weckström, 05.08.2005 → 31.12.2011, Spain

Yliopisto-lehti, Kaarina Weckström, 09.09.2005 → 31.12.2011, Spain

#### **Stephen Venn ,**

Esitelmä ESPYY:n vuosikokouksessa, Stephen Venn, 01.05.2002 → 31.12.2011, Poland

Haastattelu ESPYY-lehdessä, Stephen Venn, 01.05.2002 → 31.12.2011, Poland

#### **Minna Väiliranta ,**

Se muuttuu sittenkin, Minna Väiliranta, 2005, Finland

Suosta kairatut tarinat, Minna Väiliranta, 2007

Palsojen ikiroudat uhkaavat sulaa, Minna Väiliranta, 2010

Pohjoisten soiden karneat röyhtäykset, Minna Väiliranta, 2010

#### **Participation in radio programme**

##### **Atte Korhola ,**

Radio Suomi Tiedeuutiset, Atte Korhola, 02.03.2005 → 31.12.2011, Belgium

YLE Radio Rovaniemi, Atte Korhola, 01.03.2005 → 31.12.2011, Belgium

Radio Helsinki, Atte Korhola, 11.04.2006 → 31.12.2011, Belgium

Helsingin Sanomat, Radion pääuutiset, Metro, 100 + yli 10 sanomalehteä, Atte Korhola, 13.09.2007 → 31.12.2011, Finland

Radio Uutiset (Main radio news), Atte Korhola, 02.02.2007 → 31.12.2011, Finland

Radio Vega Aktuellit-17, Atte Korhola, 20.09.2007, Finland

YLE Radio News, Atte Korhola, 12.10.2007 → 31.12.2011, Finland

YLE Ykkösaamu (Radio Finland), Atte Korhola, 04.06.2007, Finland

YLE Ykkösaamu (Radio Finland), Atte Korhola, 25.09.2007, Finland

YLE radio, Atte Korhola, 04.06.2007 → 31.12.2011, Finland

YLE radio, Atte Korhola, 02.10.2007 → 31.12.2011, Finland

YLE Päivän Peili (Radio news), Atte Korhola, 12.12.2008 → 31.12.2011, Finland

YLE Radio Ajantasa., Atte Korhola, 05.03.2008 → 31.12.2011, Finland

YLE Radio News., Atte Korhola, 14.02.2008 → 31.12.2011, Finland

YLE Radio., Atte Korhola, 04.03.2008 → 31.12.2011, Finland

YLE Ylen aikainen (Radio news), Atte Korhola, 12.12.2008 → 31.12.2011, Finland

##### **Susanna Lehvävirta ,**

Radio: Science news, YLE, Radio 1 (national broadcast) Interview (in Finnish): Urban forests - from intensive management to benign neglect (Kaupunkimetsät eivät tarvitse jatkuvaa hoito – silmälläpito riittää), Susanna Lehvävirta, 20.05.2005



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### RC-SPECIFIC TUHAT COMPILATIONS OF OTHER SCIENTIFIC ACTIVITIES 2005-2010

#### ENIGMA/Korhola

Tiede uutiset, radio, Susanna Lehvävirta, 20.05.2005 → 31.12.2011, Finland

##### **Martin Lodenius ,**

Radio Vega, Martin Lodenius, 10.07.2007 → 31.12.2011, Czech Republic

Radioprogram, Martin Lodenius, 15.12.2008, Finland

##### **Jari Niemelä ,**

Radiohaastattelu, Jari Niemelä, 17.11.2006, Finland

radiohaastattelu, Jari Niemelä, 17.11.2006, Finland

Esiintyminen Yle-radio 1:n ohjelmassa, Jari Niemelä, 08.03.2008, Finland

Esiintyminen Ylen aikainen radio-ohjelmassa, Jari Niemelä, 21.10.2008, Finland

Yle-radio 1, Jari Niemelä, 08.03.2008, Sweden

Esiintyminen YLE Radion Uutispuntari-ohjelmassa, Jari Niemelä, 18.06.2010, Finland

##### **Sanna Vaalgamaa ,**

Tieteen viikko, Sanna Vaalgamaa, 14.06.2007, Finland

##### **Kaarina Weckström ,**

Radio: Yle:n Tiede uutiset, Kaarina Weckström, 08.08.2005 → 31.12.2011, Spain

#### Participation in TV programme

##### **Atte Korhola ,**

TV Prisma, Atte Korhola, 05.04.2006 → 31.12.2011, Belgium

MTV-3 main news, Atte Korhola, 02.02.2007 → 31.12.2011, Finland

MTV3, Atte Korhola, 09.05.2007 → 31.12.2011, Finland

MTV3 Huomenta Suomi (Good Morning Finland), Atte Korhola, 25.01.2007 → 31.12.2011, Finland

MTV3 main television news, Atte Korhola, 29.01.2007 → 31.12.2011, Finland

TV Nelonen, Atte Korhola, 19.11.2007 → 31.12.2011, Finland

YLE TV2 Ulkolinja, Atte Korhola, 03.10.2007 → 31.12.2011, Finland

YLE1 Aamu-TV (Morning Television), Atte Korhola, 25.01.2007 → 31.12.2011, Finland

MTV3 Television, Atte Korhola, 11.02.2008 → 31.12.2011, Finland

Operaatio Maa (TV programme), Atte Korhola, 01.01.2008 → 31.12.2011, Finland

YLE TV Pääuutiset(TV main news), Atte Korhola, 12.12.2008 → 31.12.2011, Finland

YLE TV1 Morning News., Atte Korhola, 24.01.2008 → 31.12.2011, Finland

##### **Susanna Lehvävirta ,**

TV interview National broadcast (YLE Morning TV): Effects of Climate change on urban biota, Susanna Lehvävirta, 12.12.2006

##### **Martin Lodenius ,**

Intervju i TV (Obs), Martin Lodenius, 03.10.2007 → 31.12.2011, Czech Republic

##### **Jari Niemelä ,**

Esiintyminen YLE:n Uutisissa, Jari Niemelä, 08.10.2010, Finland

##### **Kaarina Weckström ,**

MTV3 - Ihana aamu, Kaarina Weckström, 29.08.2005 → 31.12.2011, Spain

TV-uutiset YLE 1, Kaarina Weckström, 28.07.2005 → 31.12.2011, Spain

TV-uutiset: Nelosen uutiset, Kaarina Weckström, 05.08.2005 → 31.12.2011, Spain

##### **Tarmo Virtanen ,**

TV-uutiset, Tarmo Virtanen, 16.07.2005 → 31.12.2011, United States



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ENIGMA/Korhola

**Participation in interview for web based media**

**Susanna Lehvavirta ,**

LUOVA Nuorten verkkolehti: Kumpulan kasvitieteellisessä puutarhassa yhdistyvät tiede ja taide, Susanna Lehvavirta, 08.06.2009

We love Helsinki: Nurmikolla saa istua!, Susanna Lehvavirta, 23.08.2009

Luontoportti. Haastattelu, Susanna Lehvavirta, 24.01.2010

**Sanna Vaalgamaa ,**

Helsingin yliopisto, viikon tiedeuutinen, Sanna Vaalgamaa, 18.06.2007 → ..., Finland



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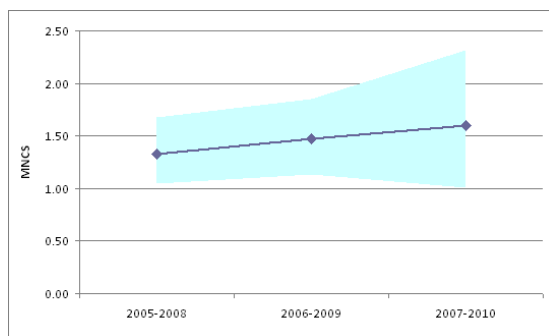
Web of Science(WoS)-based bibliometrics of the RC's publications data 1.1.2005-31.12.2010  
by CWTS, Leiden University, the Netherlands

Research Group: Korhola A

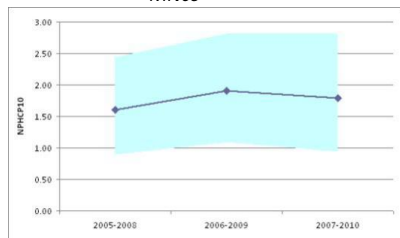
### Basic statistics

Number of publications (P)	117
Number of citations (TCS)	785
Number of citations per publication (MCS)	6.80
Percentage of uncited publications	30%
Field-normalized number of citations per publication (MNCS)	1.57
Field-normalized average journal impact (MNJS)	1.24
Field-normalized proportion highly cited publications (top 10%)	1.85
Internal coverage	.61

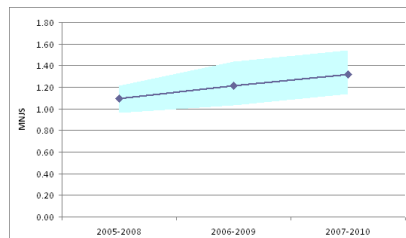
### Trend analyses



MNCS

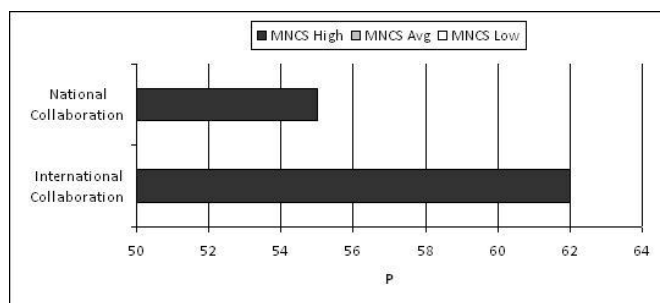


THCP10



MNJS

### Collaboration



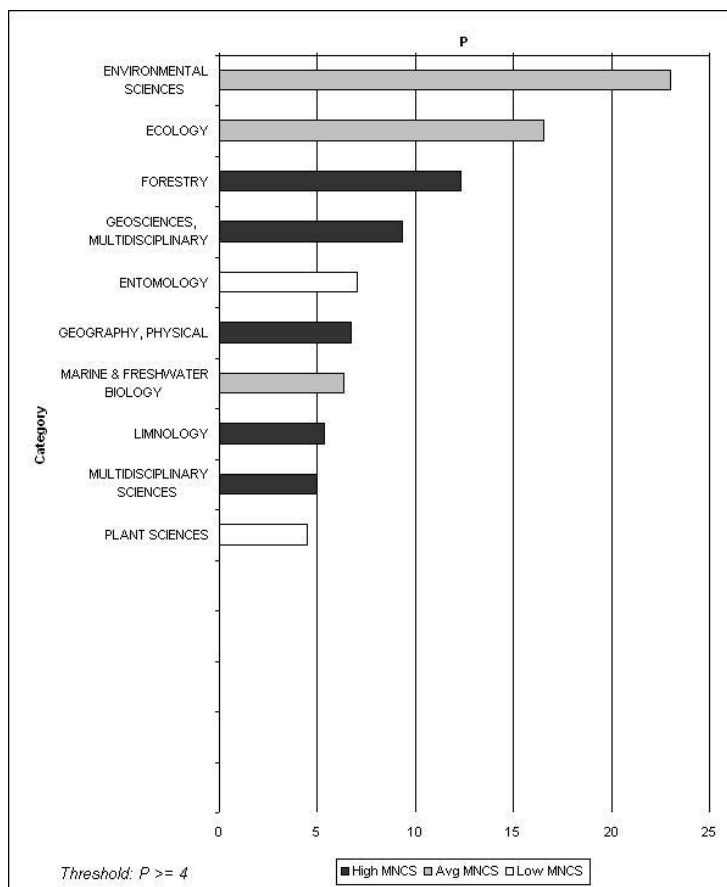
Performance (MNCS) by collaboration type



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*Research profile*



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